

Beat Oxy tomorrow night

CALIFORNIA TECH

California Institute of Technology

Volume LIV

Pasadena, California, Thursday, November 13, 1952

No. 7

YMCA starts annual fund raising drive this Monday

Irwin Rubenstein, general chairman, announces goal of \$2600, all campus personnel will be approached

The campus YMCA drive will get off to a flying start on Monday, Nov. 17, when more than 150 men will go out to raise \$2600 for the support of the Y. The drive will continue throughout the week, and during that time every person on campus will be contacted by one of the solicitors.

Rubenstein to head drive

Irwin Rubenstein, general chairman for the drive, and the Y treasurer, announced that the Y needs to secure about one fourth of its total budget of \$11,000 from the campus. Although the Y receives support from the Institute and the Pasadena YMCA, much of its expenses are met through the contributions from students, faculty, parents, alumni, and friends.

Y activities cover large area

During the last year the Y has been carrying on an expanded program of activities and services. There were on the average 300 people taking part in some Y activity each week. This means there was an aggregate attendance of well over 10,000 at Y functions. Besides this increased attendance, there was also greater use of the Y services such as the book exchange, mimeograph and adding machines, and loan fund. The Y also continues its program of meeting new students on arrival each September as well as improving its summer visitation program, which is designed to prepare new students for the shock of actual campus life.

Students, members and faculty to assist

Assisting Irwin Rubenstein in the drive will be Ken Lunan, Kai Kristensen, Leo Baggerly, Van Walkley, Al Helgesson, Dave Clark, George Moore, Bill Gardner, Dave Stevens, Leon Shameon, Miles Nesman, and Jerry Pixton. Bob Stanton is in charge of publicity.

Crazy themes make IH dance success

Tech's annual extravaganza, the Interhouse, was as spectacular as ever with all its elaborate and scientifically contrived decorations.

Everyone was rushing up till the last minute to put the finishing touches on all the unique gadgets that were featured. Aladdin's lamp, fiery volcanoes, boiling mud pits, punch waterfalls, colored lights hooked up to the band's music, a Jacobs ladder, and weird sound effects were among some of the more notable inventions cooked up by ingeni-

(Continued on Page 3)

Interview Schedule

SPECIAL NOTICE

Mr. Edward Jones of the 12th Regional District - Civil Service Commission will be on campus Friday, November 21.

Mr. Jones is interested in discussing opportunities and advantages in Civil Service employment. He will be glad to answer any questions—such as filing applications, salary scales, benefits, draft status, etc.

This is not an interview but a chance to become acquainted with all phases and possibilities of Civil Service.

Interested students are asked to see Mr. Jones in Room 150 Throop between 12:00 and 4:00 pm.

Students in flashy pajamas to troop through Pasadena

Dropping courses

Midterms are over and now we know what we shouldn't have taken. However, tomorrow is the last day for dropping courses. If you plan to drop a course go to the registrar's office in Throop.

Scripps girls provide entertainment enthused Tech men will ignite bonfire

If no one else knows it by this time, at least the Pasadena grocery store operators are aware that Pajamarino time is upon us again. The stores have been assiduously solicited this past week by frosh eager to build up box piles higher than frosh from competing houses. The mind-staggering climax toward which these preparations are leading will be reached tonight when the composite box pile is ignited.

Schedule of events

Dinner Thursday evening will be served at 6:15, picnic style, in Tournament Park. And to avoid grief, **don't forget to bring your meal card.** Come dressed in your nocturnal best, and have a try in the Showiest Pajama Contest to be held at Legion Hall. The winners of this contest will receive items of clothing donated by local haberdashers.

Following the dinner will be the bonfire, which will be touched off near seven o'clock. Dick Jaffe will lead cheers by the light of the fire, and then the parade to Legion Hall will begin. By official order of the Pasadena Police Department, only six cars will be allowed in the parade—these cars to be determined by the Rally Committee.

Entertainment by Scripps

One of the cars will contain the six Scripps girls who will be providing the entertainment for the evening, and according to John Merrill, Rally Commissioner, it should be something to see! In another flashy convertible will be riding the song leaders loaned to us for the evening by the Huntington Hospital.

This way, men

In case anyone should be so foolish as to lose sight of the girls, or lose his way, this will be the route of the parade: up Wilson from the field house to California, on California to Lake, up Lake to Colorado, over on Colorado to Marengo, and then north to the Legion Hall. The entertainment should start at 8:15, and, when it's all over, pick your own place of amusement.

Campus Calendar

THURSDAY, NOV. 13
4:30 Varsity Water Polo vs. El Camino at P.C.C.
6:00 S.A.E. Dinner Meeting at Rodger Young Auditorium, L.A.

FRIDAY, NOV. 14
4:15 Varsity and Frosh Cross Country vs. Whittier at Caltech
4:30 Varsity Water Polo vs. Compton at Compton
7:30 Friday Evening Demonstration Lecture, 201 Bridge
8:00 Varsity Soccer vs. Oxy at Oxy

SATURDAY, NOV. 15
2:00 Varsity Soccer vs. Thacher at Caltech
2:00 Frosh football vs. Whittier at Caltech

coming out of a chimney; instead they find out the weight of material going into a particular process and the amount coming out. There are limits on the amount of material that can (Continued on Page 3)

ASCIT dance will be held Nov. 22

A Thanksgiving theme will be the principal feature of the ASCIT dance for this term, to be staged November 22 at the Altadena Town and Country Club in Altadena. Benny Lagasse and his band will play for the event, which will be the only formal dance this term open to the student body.

Pumpkins, cornstalks, and other traditional Thanksgiving decorations will be in evidence in the ballroom, and a bar operated by the club management will provide refreshment for the Techmen.

Lynam placed in charge

Bob Lynam, ASCIT First Representative, is in charge of arrangements for the affair. It will be strictly formal, with tuxedos or dark suits in order for the men and formals for their dates.

This will be the only official ASCIT dance during first term, and the only student body dance, since the Frosh-Soph dance has been postponed until next term.

County smog bureau gains industrial smoke control

For the majority of the first term the weather has been very smoggy. Recently because of this, people in Pasadena have been distributing a petition asking the County Board of Supervisors to do something about the smog.

Pasadena petition

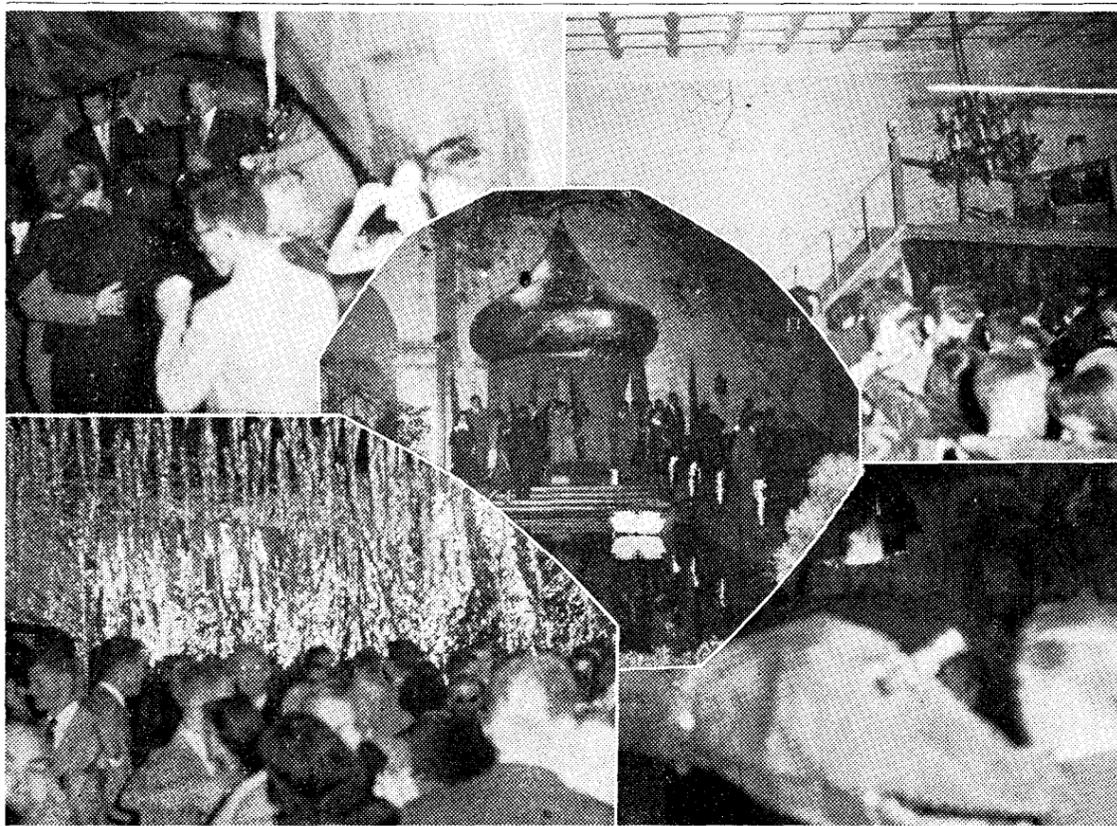
About two months ago some Pasadena city officials challenged the Board of Supervisors to place a moratorium on incinerators to see how much they contributed to the smog situation. At the City Hall open house on October 23, some municipal workers started the petition mentioned in the first paragraph. The people who are doing most on the petition are regular workers in City Hall. The Pasadena Star News printed a copy of the petition shortly after it first came out and since then it has been more widely distributed. Already more than 5000 people have signed the petition.

What's been done?

Just what has been done though in smog prevention and cleaning up? In 1948 California passed a law creating air pollution control districts including Los Angeles. The law is probably one of the most stringent in the country and has some very interesting points. Los Angeles County is divided into 18 districts for the purpose of smog control. These districts vary in size according to how much polluting material is produced in the area. For instance, Pasadena is district 18 and includes Mount Wilson and Pomona, while Vernon is in a district that is only about three-fourths of a mile wide and about three miles long. Each of these districts has an inspector who may check up on the amount of discharge going into the air at any time of the day or night or any day of the week.

Special check

These inspectors do not check the amount of noxious material



About the smog petition . . .

Is the smog getting you down on these dreary days? Ap- don't think that the County Air Pollution Control Commission has been doing enough to check the scourge of Los Angeles. These Pasadena officials have issued a smog petition which is currently being circulated as widely as possible. The petition is asking the Commission to "do something" about the present smog conditions.

Actually while there are currently several theories about the origin and control of smog, something seems to have been done by the County Commission, as it claims that as a result of the four and one half years of work of the Commission 450 tons per day of air pollutants that formerly went into the air are now being collected or prevented from going into the atmosphere.

The above seems a good result on paper, but going out on a smoggy day, which still can be done too frequently, seems to disprove the claims of the Commission. However, in view of the extreme difficulties which have confronted the Commission, we believe that the best possible practical methods have been used in trying to curb smog and that there has been some improvement in the situation, witness at least three consecutive clear days in the immediate past. Therefore it is not for some irked laymen to cry out the well known "do something."

President's Message . . .

Next week a solicitor will knock on your door and ask for a contribution to the Caltech YMCA finance drive. I ask you to consider a few thoughts in making your contribution. Directly or indirectly everyone on campus benefits from the activities and facilities of the YMCA, and only through our financial support can the YMCA continue its valuable program. Throughout the year the "Y" is cooperating with and assisting the ASCIT in its many functions and operations. Read the article on the front page and read the literature provided by the solicitors, then consider your contribution in view of the many activities and services of the Caltech YMCA.

Support the "Y," it is yours and depends on you!

John Gee,
ASCIT President

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As the Beak pens these im- moral lines, he hears echoing from the far corner of Ricketts the beautiful, melodious sounds of the illustrious Alley Band. This is the famous band composed entirely of tone-deaf musicians, which tends to give a very different effect. Instrumentation varies from leaky accordion to comb and tissue paper, and includes a marvelous waste-basket percussion section and glee club. Concerts are given here and there, at odd times, and all are invited to attend. You might as well, since you can't snake over the god-awful racket, any- way.

Mr. C. Dunn will go down in history as the only man to have an especially reserved seat in the Ricketts room behind the bookcase. Despite the superb lighting arrangements in the MOR, it is not known if Chuck took full advantage of this stroke of John Wall's paint brush.

Hearts & flowers

Higgins and Rocchio have entered competition for the most piteous tale of the week with a long story which boils down to the fact that they were stuck by a thirteen-year-old, with the net result that they arrived at the IHD many hours late. When last seen they were contemplat-

ing dissecting the lad with a dull spoon.

Half man . . .

The Rowdies had a rather in- teresting punch dispenser for the Interhouse—viz., one-half of one Ashton Brown. This vivi- section was neatly revenged by Mr. Brown, however, by his service to House President Mc- Cormick—with the straightest face we've ever seen yet our Ash dealt the said president one glass of pasteurized cider; to the first lady of the evening went a large-sized sample from the other barrel—Ah, well, Bill—there's always the Macaroni Club—

Wild?

Bates, Gardner, and Ogilvie, being men with an unquestiona- bly practical outlook on life, asked thei dates on Saturday morning to help with the decora- tions. Sounds good, if you can get away with it.—The fol- lowing day these six sallied forth to smoke out a wild bees' hive in Griffith Park. They were either lucky or unlucky, depend- ing on your point of view—the bees were gone.

Purity Pete Finley turned down three dates for the Inter- house. Why? We aren't sure, except that he keeps sitting and sighing over those letters from home. Gad, true love hasn't died after all.

Red blooded . . .

The mighty terror of the grid- iron, the man who didn't know there even was an opposite sex until he met his mother; yep, we're talking about Hugh Tay- (Continued on Page 8)

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California Tech

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GRAD CRIER

by Jerome Herschman

It is my purpose to present in this column the views of grad- uate students on all phases of their student life. To do this ade- quately, I shall need the coopera- tion of all grad students who want to make public their gripes and glories concerning Caltech. When one of my fellow grads who is qualified to do so wants to present his viewpoint on some pertinent topic, I shall gladly turn that week's column entirely over to him. To those who shy away from the herculean task of writing on a topic that they are interested in, but who neverthe- less want to express their opin- ion, I would be most happy to listen to it and incorporate it into the Grad Crier. I can be reached in 53 Crellin.

It seems to me that there is a most disheartening paradox about Caltech. Opinion has it that as a scientific and research insti- tution, it is unexcelled. It turns out very capable scientists and engineers. It is also renowned for having been one of the first technical schools to incorporate the social sciences and humani- ties into all four years of its un- dergraduate curriculum. The paradox lies in the fact that the nature of the institution encour- ages many distinguished scien- tists to visit the campus as guest lecturers, but encourages almost no distinguished men of arts and letters to appear. The stu- dent receives constant stimula- tion in his scientific field but almost none in the humanities or social sciences. The courses in these subjects which the un-

(Continued on Page 4)

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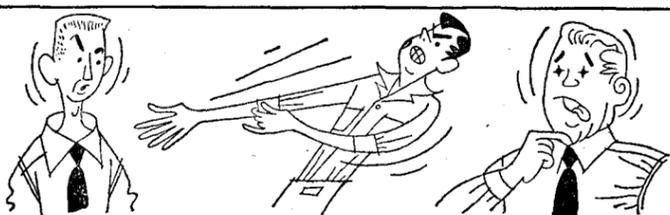
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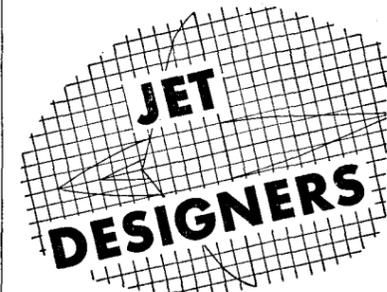


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SEC'S AT TECH

by Bernie Schweitzer and Tom Taussig

Rejoice, ye grovelers in the dungeons, ye denizens of the snake pits — for something new has come to the California Tech. Not to be outdone by the local co-ed schools, your friendly editors have decided to introduce some of our own local pulchritude to the readers of this slimy rag.

Each week, a picture of one of the Institute's many secretaries will appear in this column, along with a brief commentary. Any suggestions as to choice of material will be welcome, and should be addressed to the feature editor.

This week's lovely can usually be found in the Chemistry office, room 119, Gates. Her name is Joan Brinkman.

Joan hails from Cincinnati, Ohio, where she went to high school, graduating in 1948. Since then, she has been a secretary for General Electric, coming to California only a month ago. Joan says she likes it out here, especially because she is fond of swimming and tennis. She also reads historical novels and classical poetry, and likes to cook. Hats off to you, Joan, our first secretary of the week.



CAMPUS BREWINS (Continued from Page 2)

lor, was actually seen with what looked like a real live ginch Saturday night. Egad, what will all the clean-living frosh who look to him as a hero of Spartan qualities think? This is worse than Gene Autry in a kissing scene!

Hmm

There comes a report from reliable sources in the Dabney Bowling Alley that the amount of studying done per time consumed is fantastically high if pursued in the confines of the private basement library room

(Continued on Page 6)

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THE SPACE BEAVER

By WALT LEE

MOVIES

Universal International is now producing **The Sea Monster**, a movie about a seven-foot thing that comes out of the Amazon River and gives people a rough time. The monster, as modeled by make-up wizard Bud Westmore, has the face of a frog, and the body of Lex Barker. It sounds like an underwater Frankenstein monster.

Watch for the following SF movie soon to be released: **The Twonky**, story of a super TV set; **War of the Worlds**, Paramount's production (Bonestell and Powell) of H. G. Wells' classic with a few "slight" changes; **The Red Planet Mars**, a United Artists production—apt to be hack.

Amazing Stories Goes Digest

Amazing Stories, the oldest pulp science-fiction magazine, was first published in April, and bimonthly with more mature reading matter.

Fantastic Adventures To Quit

The last issue of **FA** will be the March, 1953, issue, on the stands about January 20, 1953.

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It will be officially combined with **Fantastic** with the sixth issue, the April-May, 1953, issue. "No stories from **FA** will be used in **Fantastic**." Thank Heaven!

1926. Now **AS** is to become a twin of its popular sister magazine, **Fantastic**, of the eight color plates and two-color inside illustrations.

The last pulp issue will be the March, 1953. Beginning with the April-May, 1953, issue it will be digest—size, 160 pages, 35c.

INDEX to the SCIENCE FICTION MAGAZINES, Donald B. Day, Perri Press, 1952.

This is Don Day's long-awaited cross-index to all the SF and most of the fantasy fiction published in the last quarter century. The large volume represents a tremendous amount of work and the result is spectacular: over 20,000 separate entries. As Day says, "If you have gathered the impression that this **Index** represents a lot of work, you are so right." The book contains an index of titles and an index of authors, as well as a list of magazines indexed with cover artists given. Also given are all the obtainable pen names.

CRAZY THEME (Continued from Page 1)

inum foil and convincing stalagous Techmen.

Blacker came through with a realistic portrayal of an "Arabian Night" in its courtyard. Moving through Aladdin's cave, couples viewed prehistoric monsters in the "Tunnel" before emerging on Dabney and the Dawn of History complete with echo cave rumbling noises and black light.

Moving into Fleming one wondered if this were truly the same old place, what with all the alumtites. Kubla Khan's ice castle was spectacular to say the least, and for once a completely enclosed lounge was not stuffy with 3500 pounds of ice sitting around to cool the room off.

Over in Ricketts the haunted

SMOG BUREAU (Continued from Page 1)

be lost without any pollution controls. For instance, a plant that processes 50 lbs. per hour may lose only one-fourth of a pound per hour. The scale is not proportional though so that a plant that processes 50,000 lbs. per hour may not lose more than 34.3 lbs. per hour. In this way the smaller manufacturers are not forced to invest large sums on smoke control equipment.

If a company is found to be violating the law, it is asked to present plans for a device to reduce the amount of pollutants that he is dissipating. He then submits plans for this device to the engineers of the Pollution Control District who may then approve them. When the device has been installed the process is checked and if it gets a clean bill of health the company gets authorization to continue operation.

Can suspend operations

If within a reasonable length of time the company has not installed the equipment, the district may bring them before a special hearing board made up of two lawyers and an engineer. (At this point I must digress.) When the law was enacted a blanket permission for companies to operate equipment that might produce smog at least until it was found that it was violating the law. At the hearing mentioned above, the Pollution District may ask that this permission to operate the offending equipment be revoked and effectively suspend operations.

house suddenly became very lively, although chills went through some of the less hardy souls.

Caves seemed to be popular at this Interhouse, Thoop turned their club house into one and almost forgot to put a door on it. Officer Newton was almost needed to direct the heavy traffic eagerly pushing in and out of the den.

Y to hold race relations discussion

Next Tuesday evening at 7:30 at the Y residence, as a followup on the presentation of the film, "The Quiet One," the YMCA will present a second program on race relations. The general topic will be "Civil Rights—a Political Football."

The speaker and moderator of the discussion will be James Farmer, a man admirably suited to the task. He is a Negro author and lecturer who has devoted his life to an understanding of the whole field of race relations.

... But only Time will Tell

THE GUY SAID IT WILL BE THE RICHEST MINE IN THE WORLD!

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There must be a reason why!

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CIT employs architect firm

The architectural firm of Pereira & Luckman, of Los Angeles, has been employed by Caltech as consulting architects to the Institute. Dr. DuBridge announced today on behalf of the Board of Trustees.

"It is desirable for the Institute to have a modern campus development program worked out. Then, when and as funds become available for the construction of new athletic facilities, new dormitories or new laboratories the location and general design of these facilities will have been planned in advance with a view to a coherent development of the entire campus.

GRAD CRIER

(Continued from Page 2)

dergraduate takes provide, I imagine, some incentive for him to do something in these fields.

I come from a large university and consequently miss the presence of men who are well versed in fields other than the sciences. I don't want to give the impression that I am an intellectual highbrow looking down on Caltech, but I do want to voice a gripe concerning lack of interest in the humanities and social sciences because no dignitaries in these fields are around to provide incentive. I hold the personal opinion that incentive gained as an undergraduate isn't something that lingers forever. It provides only the initial stimulus and diminishes with time.

Let me offer one suggestion to remedy this deficiency. I think

that a discussion group which meets a couple hours every other week perhaps and is organized along the lines of the "Great Books Course" of the University of Chicago would be a welcome addition to the interested graduate students' education. I would appreciate hearing from those who would be interested in organizing something like a "Great Books Course."

The above argument and suggestion are based upon the assumption that the curriculum of life requires knowledge and interest in the humanities and social sciences as well as proficiency in some "bread and butter" field.

Egad!

He: I suppose you dance?

She: Oh yes, I love to.

He: Great, let's do that instead!

Discoveries at Tech find rainbows between galaxies

Astronomical research at Caltech has shown that some widely-separated extragalactic nebulae do not necessarily live in complete isolation from each other.

Intergalactic Rainbows

Luminous bridges more than ten thousand million million miles long—substantially longer than any previously known—have been found to extend between a number of these gigantic starry islands which float by the millions in the universal ocean of space. These observations were made by Dr. Fritz Zwicky, professor of astrophysics, and have been confirmed with various instruments at Caltech's Palomar Observatory and the Mount Wilson Observatory of the Carnegie Institution of Washington. They are reported

in the current Publications of the Astronomical Society of the Pacific.

Dumb-bells and Yataghans

After the identification of extragalactic nebulae, astronomers found that luminous filaments sometimes join comparatively close, double nebulae, like the bars of dumb-bells. But that faint luminous clouds stretching between nebulae separated by extremely great distances—many times the diameters of the nebulae involved—are relatively common had been generally unknown. Professor Zwicky found such internebular highways in plates exposed with the 18-inch schmidt telescope on Palomar Mountain and later with the 48-inch schmidt, which—like the 200-inch Hale Telescope—had proved capable of recording fainter objects than had hitherto been possible. The phenomenon is illustrated in the following example (one of the first encountered):

Boulevard in the sky

The system in question consists of three nebulae in the constellation of Virgo at a distance of about 50 million light years from the earth. Between the nebula (IC3481) at the upper end of the system and the one (uncatalogued) diagonally below and slightly left of it lies a band of luminosity almost as sharply delineated as a lighted boulevard. Between the anonymous nebula and the one (IC-3483) diagonally below and left of it arches a somewhat less sharply defined strand shaped like an oriental sword. On the present distance scale IC3481 and IC3483 are separated by a projected distance of 72,000 light years. Thus the internebular cloud, because of its yataghan-like course, has a span greater than 72,000 light years.

Contrast between the cloud and the sky background on the photograph on which the cloud was first found is so slight that a casual observer might easily miss it. Professor Zwicky noted, however, that once the observer knows what to look for, a discerning eye can readily detect many similar cases. The most important of the systems so far spotted are now being photographed with the 200-inch telescope.

(Continued on Page 6)



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Then, if we select your jingle, we'll pay you for the right to use it, together with your name, in Lucky Strike advertising... probably in this paper.

Read the sample jingles on this page. Then get the gang together, break out the rhyming dictionary, and start writing. It's fun! And we're buying jingles by the bushel!

Hint—if you can sing your jingle, it's a good one!

Hint—the more jingles you write, the more money you have a chance of making.

Hint—be sure to read *all* the instructions!

I've heard the same in every class—
In history, psych, and ec—
For cleaner, fresher, smoother smokes,
It's Lucky Strike, by heck!



I like a better-tasting smoke
And mildness counts with me.
So when I buy I keep in mind
That L.S./M.F.T.!



HERE ARE THE INSTRUCTIONS

1. Write your Lucky Strike jingle on a plain piece of paper or post card and send it to Happy-Go-Lucky, P. O. Box 67, New York 46, N. Y. Be sure that your name, address, college and class are included—and that they are legible.
2. Base your jingle on any qualities of Luckies. "Luckies are *made better to taste better*," is only one. (See "Tips to money-makers.")
3. Every student of any college, university or post-graduate school may submit jingles.
4. You may submit as many jingles as you like. Remember, you are eligible to win more than one \$25 award.

*TIPS TO MONEY-MAKERS

To write a winning Lucky Strike jingle, you're not limited to "Luckies are *made better to taste better*." Use any other sales points on Lucky Strike such as the following:
L.S./M.F.T.
Lucky Strike Means Fine Tobacco
Luckies' cigarette-tearing demonstration
Luckies taste cleaner, fresher, smoother
Be Happy—Go Lucky
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Frosh football team shows power, spirit

Wins show it as one of strongest frosh teams in modern history

By Dave King

This Saturday the frosh football team plays their final and toughest game of the season against Whittier. The Poets have displayed tremendous strength and talent in battering all comers thus far. However, our own frosh have put on a show not seen for many years by winning two out of three.

In the game on November 1 the Beavers stopped Pomona, for the second time, to the tune of 19-14. Phil Conley displayed his usual excellent football savvy and had the whole crowd breathless with his fantastic one-handed interception of a Sagechick pass, which he ran for a TD. Not to be outdone, Big Art Takido ran around left end on two opportunities to score another 12 points.

To set up the first touchdown a new tackle-eligible play, with John Hickey taking the pass from quarterback Chuch Lehman, caught Pomona napping and the ball was downed a few yards from the goal. The next play scored.

It's interesting to watch the frosh in practice, because with all the kidding around and horse-play that goes on one can't imagine their taking a game seriously enough to win. But they do. The boys are good, and they show it. With men like "60-minute Maltz," Larry Whitlow, Barry Raleigh and Bruce Rickborn opening holes big enough to get a good look at Jane Russell through it's a lot easier for the backs to run up the yards.

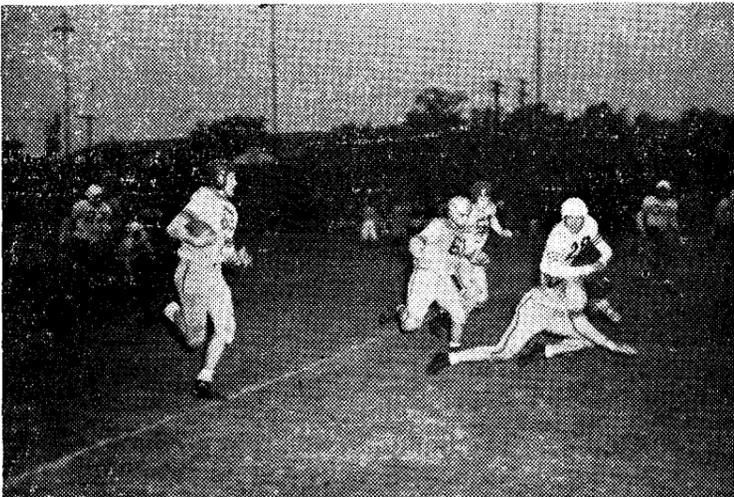
In the backfield along with Chuck Lehman and Art Takido are Pete Finley and Little Jim Okada. These men can be counted on to come through when the going is rough to run and pass for more and more yardage. Chuck, one of the many who had never played football before, has improved beautifully in his play calling and passing. The two offensive ends, Conley and Tom Parker have proved time and again that when the downs get scarce you can count on them for a performance to get that first-in-ten.

Probably the best defensive man, the guy who has consistently stopped runners almost twice his size and hit them so hard that fumbling is an ever increasing occurrence, is Purity Pete Finley—another man with almost no past experience.

We could go on naming the players who are always in there fighting, charging, and really giving that old college try—Alex Ozeroff, Dick Small, Carey, Snider, McCune, Holladay, Lindfors. Call it rah, rah, stuff if you like, but every one is out there to win.

Two men who really deserve bouquets are coaches Ivan Meers and Ed Preisler. It's gratifying to them to have good material, and they haven't missed a bet in developing the boys into a top team.

All of them have a huge job cut out for them Saturday, but they have what it takes. Get in there and stomp 'em guys. Let's BEAT WHITTIER!



Conley takes screen pass as Whitlow lays key block and Maltz and Holliday add interference. Gain: a mere 50 yards.

Thatcher next for soccermen

Due to the "Great Plague" which has struck the Soccer team, the UCLA game to have been played last Friday, has been postponed until November 26. This Saturday, however, the shinkickers will go after their fourth victory of the season against Thatcher. The game will be played at 10 am on the home field and it is hoped that at least some of the infirm will be ready for action.



Lettermen attention!

Measurements of varsity major and minor sport athletes will be taken in Ricketts lounge tomorrow after lunch. Be sure to be present if you want your reward before Christmas.



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Over the wall

By John Wall

Tomorrow is the Big Game, at least for Caltech, for tomorrow the Beavers take the gridiron against the Tigers of Occidental. This year the Oxy record has not been too spectacular, but the dopesters (if interested) will probably place Oxy 20-point favorites, thanks to the fine record of the team so far.

Every year all loyal Techmen look forward to a big victory. This year is no different. If we face the facts and ask ourselves, "Just why should we win this one and lose to Pomona, Redlands, Flagstaff, and La Verne?", we find it hard to answer for Oxy certainly is stronger than any of those teams. Our team hasn't picked up any new stars or any new secret weapons over last week. Let's hope it isn't the same team mentally.

It would be rash of us to say that there was anyone in suit this Friday who didn't want to win, but it has been spirit, not ability, that has beaten us.

From my point of view, I don't think spirit will be the excuse for defeat this time. Perhaps the team's optimism is infectious but I think we may all look forward to a defensive line that pours through on the Tiger backs, a defensive backfield that doesn't let those long TD passes that cost so many games, an offensive line that not only makes the holes but goes downfield to help make a TD of every play, and an offensive backfield that rifles its passes and doesn't fumble.

Spirit shouldn't be the only improved feature. We've all seen

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 Friday: Water Polo at Compton.
 Football at Oxy.
 Cross Country, Whittier here.
 Saturday: Soccer, Thatcher here.

Tips-N-Tails

by Dickl Millard

This is the first of a series of articles to give you the dope on the Ski Club, snow conditions, new equipment, and other pertinent facts on skiing.

The Ski Club is running a trip to Mammoth during Thanksgiving and one to Aspen, Colorado, during Christmas vacation. The Mammoth trip will leave the afternoon of Wednesday the 26th, if there is snow, and return the following Sunday. Several beginners are going and others are urged to come along as there will be free lessons given by a club member.

Beginners

Incidentally, for those without equipment, most of the ski shops in Pasadena are renting skis, boots and poles for \$6 for the four-day weekend. Chamberlain Athletic Co. has the best rentals. You beginners can't find a less expensive way to get started than the Mammoth deal.

Aspen

The Aspen trip will leave about Dec. 20 and return by the second or third. There will be about 10 days skiing in one of the best areas in the country for about \$100 each. This is a lot of money, but a good price for two weeks room and board plus tow fees and transportation. Anyone interested should see me in Ricketts as soon as possible as reservations must be made early.

OVER THE WALL

(Continued from Page 5)

the hard running and clever ball handling of Pat Fazio, Jack Walker, and Al Johnson; but some of us were must distressed by Ed Gehle's running and Eric Ward's passing and ball handling in the first part of the season. I don't think this distress will continue past tomorrow for Big Ed, who used to start like a battered senior going to breakfast, has been running very hard of late to the point that I'd like to compare him to all-conference Hal Woody. Eric, once too good for the team, begins to look too good for Oxy's good. He is slowly developing his rifle arm to where it functions in games, and early this week his ball handling looked down right beautiful. Captain Fazio may yet start at halfback instead of his usual quarterback slot.

If the Muelbergers, Ernests, and McDonalds function up to their ability on the forward wall, there is no doubt in my mind that the game ball will reside in the Tech athletic office Saturday morning.

And you: grads, faculty, secretaries, and even students, let's get out and help keep up that spirit of the varsity (but not while they are trying to hear the signals.) See you there.
Beat Oxy!

Cross countrymen blast Bulldogs

There were smiles around the Tournament Park oval Friday as the Tech cross country team blasted a weak but game Redlands squad 20-43. The frosh squad also won, but by a default. Leading the team was Leigh Gardner, followed by Crowther, LaTourette, Mandelfi and Patraw. Close behind came Ames, Marshall, and Cramer. Only Redlands man to break into the first eight was Eaton, the other Bulldogs being far back.

Walkley

Van Walkley actually finished first for Tech but was declared ineligible after he was paced for a ways. Big Van also came in ahead of the other Tech harriers against Oxy, but was only seventh in the meet. Frosh Lewis was first in practice meet held in place of the Frosh-Redlands meet.

Whittier

This Friday the leatherlungers run headlong into the Whittier Poets. Bonham and co. sport about the best cross-country team seen in several years in SCIC. They have beaten such teams as Oxy and USC. Their frosh can be beaten, however. The meet is here at 4:15.

Cagers move into 3rd week practice

The Orange and White cagers moved into their third week of practice with more men reporting. Coach Shy has stepped up workouts in anticipation of the early games this year. Practices have included numerous intersquad scrimmages and a practice meet with PCC, which Tech won handily.

The men

Those out so far are Anson, Tyler, Chambers, Matson, Moody, Shanks, Stevens, Watkins, Ireland, Britt, and VanHoven. Expected from interhouse are Smith, Kaganoff. Expected from football are Ward and Gee.

Nazarene

Spirit is very high and some men are vastly improved. Jim Tyler, George Matson, and Roe Moody have looked exceptionally good. The first test comes Nov. 22 when we meet Pasadena Nazarene. The Redlands tourney will also be good. That comes Dec. 4-6.

Frosh

Frosh practice will start on next Tuesday at 4:45 in the McKinley gym. Prospects look good and a fine schedule is on tap.

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Pigskin Prognostications

GAME	Mr. Musselman	John Wall	George Patraw	Tom Emery
SC Washington	SC 14	SC 21	Wash. 1	SC 18
Mich. St. Notre Dame	Mich. St. 7	Mich. St. 14	Notre Dame 1	Mich. St. 24
Michigan Purdue	Michigan 6	Purdue 14	Purdue 7	Purdue 12
Minnesota Nebraska	Minnesota 7	Minnesota 20	Nebraska 14	Minnesota 14

DICOVERIES AT TECH (Continued from Page 4)

What and Why

What are the constituents of the lane between IC3481 and IC-3483? Red and blue-sensitive plates from the 48-inch schmidt and the Mount Wilson 100-inch telescope seem to indicate that the cloud is relatively blue although many shades of color exist. This may mean that the material differs in composition from one region to another, and one possible explanation is that there are different relative numbers of blue and red stars in it. It has not yet, however, been resolved into stars.

Wha' hopen?

It is possible only to make a guess as to how this lane came to be. One tentative explanation would run like this: The three nebulae may be rotating around, oscillating through, or passing each other. When they are at their closest approach they disrupt one another. They may then eject stars and perhaps other matter into the space around them. It may even be that some stars are escaping from the triple system entirely and hurtling into the space outside the cloud. Another conceivable explanation might be that some of the internebular cloud, or perhaps even most of it, may have been formed when the nebulae were born or may have originated independently of them.

Whether such bridges are numerous enough to mean that the amount of matter in the universe has been underestimated by a significant amount is a question for the future. If they prevail widely and if in addition dust is demonstrably present in internebular space (and Professor Zwicky believes he is accumulating evidence to this effect), then some revision may be indicated in such estimates and also in those portions of cosmological theories influenced by them.

Use a yardstick

The amount of matter in the universe, its distribution and the average density of the universe are all basic to cosmological theory. If one root factor changes appreciably, the effect is felt in all branches of the structure growing from it. Knowledge of the masses of the nebulae themselves is important to cosmologists and one method of determining these masses is by calculation from appropriate measurements on double nebulae. However, it is not always irrevocably certain that two nebulae are true doubles when they are observable only in the line-of-sight. They might be several hundred thousand light years apart and the accuracy of the reckoning may suffer for this reason. But nebulae bridged by

CAMPUS BREWINS (Continued from Page 3)

at Scripps. The idea is to get a Schimpssie to invite you to the sound-proof enclosure and then take it from there. Anyone for snaking?

Wandering into Fleming Saturday night the Beak paused to decide whether he was in an ice cave or a silver mine, and despite the sad omission of a bust of Coleridge, finally managed to recognize the pleasure

filaments such as Professor Zwicky has found are definitely double, triple or otherwise multiple systems with all their members at very nearly the same distance from the observer.

Out of the past

The discovery also has implications in the estimation of the distances of far-off objects. Astronomers cannot rule off or step off the distance to nebulae and have had to resort to a roundabout method. This method depends on the absolute brightness of the object whose light they capture on photographic plates or in electronic instruments. Not difficult at all to understand is the fact that light passing through a fog is fainter on the other side of the pall than if it had traveled through a vacuum. Thus, if dense internebular clouds should abound in space they might absorb enough of the light from distant nebulae to produce errors in the estimation of nebular distances.

One interesting sidelight is a possibility that the Milky Way itself may be joined to our 90,000-light-years-distant neighbor, the Nubecula Major or Large Magellanic Cloud. More than a century ago the British astronomer, Sir John F. W. Herschel, wondered about this as, "entirely without telescopic aid, when seated at a table in the open air, in the absence of the moon," he scanned the southern skies from a South African observatory at the Cape of Good Hope. He wrote that no branch of the Milky Way whatsoever forms "any certain and conspicuous junction with (the Nubecula Major); though on very clear nights I have sometimes fancied a feeble extension of the nearer portion of the Milky Way in Argo (where it is not above 15° or 20° distinct) in the direction of the nubecula."

Professor Zwicky has called this observation, and his own findings on internebular bridges, to the attention of the Commonwealth Observatory at Mount Stromlo, Australia. Astronomers there have replied that they will be on the lookout for any connection with the Large Magellanic Cloud, which is visible only in the southern hemisphere.

Sailing club

To give an indication of the esteem in which the Caltech Club is now held by its Pacific Coast competitors, it now has challenges from USC, UCLA, PCC, Pomona, Stanford, and Cal. The club will have ample opportunity to demonstrate its sailing prowess during the coming year.

The Sailing Club featured a Technicolor movie of the Honolulu race at its meeting last Monday. The movie was filmed from the **Morning Star**, the boat with the fastest time, and gave a good preview of what Caltech's sailors may expect to be doing later on in the year.

palace of Fleming's chief advocate of things cultural, Kubla Khan Kliegel.

Ten percenters

The recent alumni and other former house members present almost crowded the troops out. Practically 90 percent of the house showed up, with even LeTourneau breaking down, but George (Snake) Moore was shocked to return from his bachelor wanderings to find his mirror gracing the north wall of the lounge. Undaunted, George rounded up valet Al Goldman and came down to wield the razor.

A small party in alley five drew panhandlers from as far as Pomona and UCLA to sample the famous Tahitian Crock. Beyond control of the generous host after the first few hours, various revelers extended the party to several secret Pasadena locations. We are happy to announce that, as of Monday, everyone is back safe and healthy (?) again.

Upon wandering into Blacker last Saturday eve, the Beak went berserk over the dancing girl, but not having enough juice to run her motor, turned reluctantly to more mundane items. Don Hook was seen with his former one and only, and the glow of enraptured bliss once again emanated from Stefanides as the stained one was observed emerging from Rickett's passion pit with his true love in tow.

Casual

Alex Ozeroff opened his eyes long enough to attend the affair and cut a striking figure indeed as he maneuvered his date around the dance floor with his hands in his pockets. Al Nichols was seen leaving very early as Rickett's Zombie water proved to be too much for his femme. Earl Jacobs was seen with a woman . . . (miracles do happen).

Rolf Hastrup, professional presenter, is back in business. Being unable to retrieve his own pin from the last heartthrob, resourceful Rolf neatly solved the problem by BORROWING one from John Goetten, presenting it immediately to an Oxy lass. The practical-minded lad obtained a box of cookies in return. Complications have developed, however, as big John is threatening to sue for possession.

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