

Shymen drop UCR to end losing streak

Shattering a 36-game tradition built up for over two years, Caltech's varsity basketball team defeated the University of California (Riverside branch), 57-46 Saturday at the Scott Brown gymnasium. The Beavers utilized a fast breaking offense to full advantage, pulling away to an easy victory after a slow start.

2-8

The first nine minutes of the game saw the Beavers missing just about every shot in the book, and Caltech trailed 8-2 with eleven minutes left in the first half. Then the Beaver fast break went into high gear. With Fred Newman and Dick Van Kirk facing the attack, Caltech forged to a 20-17 halftime lead.

20-21

Riverside scored two quick baskets at the start of the second half to move to a 21-20 lead, their last of the game. Then the Caltech fast break began to shatter the UCD defenses, as Newman, Jim Welsh, Glenn Converse, and Van Kirk got the jump on the Riverside defenders several times for easy lay-ins. Larry Kraus, Beaver center, originated most of the Caltech fast breaks after controlling the defensive rebound.

43-30

With ten minutes left in the game, Caltech had pulled to a 43-30 lead, and the Beavers moved back into their slow offense pattern. At this point the Riverside hoopsters began finding the range on their outside shots, and UCR managed to narrow the gap to 47-42. Then the Riverside attack began to stall again, and Caltech pulled away to a ten point margin to put the game on ice.

Four players scored in double figures for the Beavers. Newman scored 16, Van Kirk 14, Welsh 12, and Converse 11. Kraus scored only two points, but had practically complete control of the rebounds in the game.

Charities drive ends tomorrow

The ASCIT Charities Drive ends tomorrow. This is the only chance for undergraduates and graduates to contribute to off-campus charities. General chairman of the drive is Rube Moulton, ASCIT vice president.

The four charities included this year are World University Service, the American Cancer Society, the American Heart Association, and the Pasadena Community Chest.

One grand to WUS

The World University Service is supported entirely by students within university communities. It serves students throughout the world, especially in Asia. ASCIT has already advanced \$1,000 from this year's drive to aid Hungarian refugees.

The house which contributes the most money will be served dinner by the faculty and provided with other entertainment.



Photo by D. Groce

Dick Van Kirk lays one in as the Beavers down Riverside, 57-46 to break a 36-game losing streak. Fred Newman (21) and Herb Rauch move in to rebound for Tech.

Ravenholt acquaints students with problems of Philippines

Bursting into the Caltech sphere this last Monday, Albert Ravenholt, American Universities Field Staff's Philippine observer, began a week of continuous activities. This year he is making his third visit to member schools of the AUFPS, his others completed in 1951-52.

Between his other visits, he ventured to the Philippines and China. But this wasn't his first contact with the Eastern Asians. During World War II, Mr. Ravenholt served as a correspondent of Asian affairs, traveling, studying, and writing in China, India, Indo-China, and the Philippines. After the war he returned to the States and to Harvard University where he spent a year in advanced study of far eastern affairs under the sponsorship of the Institute of Current World Affairs.

School's elections produce politicians

The corporation's Board of Directors, the Head Yell Leader, and the executives of the school publications are to be chosen by elections on Thursday, February 21.

Candidates will follow a traditional routine during the campaign, commencing with statements for the California Tech.

Sunday, February 17, posters will spring up on the olive walk, and Monday the office-seekers will begin speaking in the student houses during meals.

Give blood—halt polio!

Current research being done in polio by the Biology department requires human blood serum for experimental use. However, the supply of serum has recently been exhausted, and in order to continue research, the department is offering the token fee of five dollars per pint of human blood. Undergraduate volunteers can give their blood next Wednesday and Thursday at the Health Center.

Philippines

More recently he has lived in the Philippines, where he has studied many facets of Philippine life—local self government in rural areas, minorities' relations, tropical agriculture, the growth of the Philippine Labor Movement, and United States relations with the governments of the Western Pacific.

Today at the Lunch Club and this evening in the Athenaeum he will discuss the survival chances of modern China independent of the Communist mold, a talk in which he will evaluate some of the processes at work between ancient Chinese civilization, the present administrations, and the future.

(Continued on page 5)

Caltech participates in International Geophysical Year

Tech scientists join panels for NAS; Press studies Antarctic

by Mike Milder

Throughout the world some 5,000 scientists and engineers, including several teams from Caltech, are preparing for an intensive investigation of the earth, the atmosphere and the sun.

This investigation, extending from July, 1957, through December, 1958, is called the International Geophysical year. Into these 18 months scientists hope to compress a score or more of years of normal research in an attempt to get a unified picture of our physical environment.

Hilton Hotel hosts dance next month

Just three weeks from tomorrow the stylish Beverly Hilton Hotel will host this year's ASCIT Winter Formal.

With the last-minute scramble for dates not far off, Techmen can obtain from ASCIT officers Dick Kirk, Dave Leeson, and Herb Rauch impressive formal invitations sure to overcome the most vociferous "no." The dance, the "Cotillion," is set for 9:00 p.m., March 1. The orchestra of Keith Williams will be featured in the Cadore Suite and the adjoining Saray Room of the Hilton.

Dress for the occasion will be strictly formal; the tenor of this year's dance will be such that those who settle for blue suits rather than tuxedos will find themselves definitely in the minority. To aid those who do not own formal wear, arrangements for a sizeable discount have been made with Dedrick's Tux Shop, 230 So. Lake St. Orders must be placed and measurements taken before Monday, February 25.

Researchers from many nations will cooperate in making simultaneous observations of the earth's interior and crust, of the

(Continued on page 3)

Sharp advises, studies glaciers

by Eldridge Moores

Professor Robert P. Sharp, Chairman of the Division of Geological Sciences, will play an important part in the International Geophysical Year of 1957.

He is a member of the Technical Panel of Glaciology. This panel will decide what type of program to follow in the field of glaciology in the IGY. The panel will also decide how to split up the \$1,000,000 budget for glaciology among various proposed projects.

Sharp, on a project of his own, will study the Blue Glacier in the Olympic Mountains of Washington. He and his team will carry on research, limited in scope, but thorough in detail, concentrating on problems of

(Continued on page 2)



Photo by D. Groce

Dr. Frank Press, shown working on experimental seismograph.

Neher will lead ICC plans holiday Arctic travels dance in Ontario

by Brad Efron

Scientists from twelve major U. S. universities will soon be going, literally, to the ends of the earth, to find out more about the mysterious phenomenon of cosmic rays. Heading this International Geophysical Year project is Caltech's Dr. H. V. Neher. Dr. Neher, an experienced Arctic traveler, will lead expeditions to the North

(Continued on page 3)

The ICC Dance, presented annually by the Inter-College Council, will be held this year at the Ontario Armory near Pomona College.

The popular orchestra of Jerry Fielding will provide the music for this Washington's Birthday shindig. The dance, which is expected to attract more than 500 couples, will begin at 9:00 p.m. on Friday, February 22. Dress will be semi-formal—suits and ties for men.

California Tech

Editors-in-chief — Tom Dodge and Frank Kofsky
 Managing Editor — Bob Walsh
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 Brad Efron, Howard Weisberg, Ford Holtzman, Dave Gison and Gary Yale Breitbord
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 Tony Leonard, Steve Emanuel, Dave Singmaster, Dick Fiddler
 Photography: Dave Groce, Randall Schmus
 Business Manager — Ed Park
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SHARP

(Continued from page 1)

the mechanics and mode of flow of the glacier. Sharp's team will include, besides himself, Professors Barclay Ray and Clarence Allen, and three Caltech graduates, Ron Shreve, Mark Meier, and Carl Benson.

Their studies will include surface and seismic surveys to gain a knowledge of the geometry of the glacier itself and the canyon below. The seismic surveys will be conducted by Allen.

Mark Meier will determine the surface velocity field, that is, the absolute movement of the surface of the glacier relative to the surrounding ground.

The team will bore two holes through to the bottom to determine the velocity profile relative to the depth of the glacier. In addition they will study the structure in the ice, which in some ways resembles that of metamorphic rock. They will also study recent fluctuations in the size of the glacier.

Closely connected with these studies will be investigation of a theory that transverse waves of very long period and small

velocity travel down the surface of a glacier.

All these problems are to be rigorously analyzed by Sharp's colleagues, especially Ray and Shreve, who will attack them from the mathematical and physical point of view.

The team will perform this work in two forays, making observations in the summer of 1957 and again in 1958, noting the changes in a year's time.

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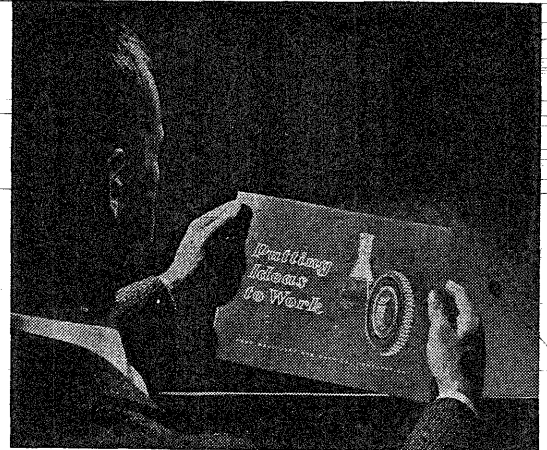
"Is Caltech, reputed to be the most liberal of the technical schools, putting enough stress on the non-technical aspects of life?" That the foregoing is the outsider's usual reaction to the Institute's name, is comparatively easy to substantiate unfortunately. For example, why do graduates have the reputation for being better at the art of juggling numbers than at the game of getting along with people? Why are even student house meals commonly admitted to be races against time, instead of a time for the interchange of interesting thoughts and ideas? It's a wonder that the quality of the food is even noticed.

Clearly, Caltech students fail to put sufficient time on these important non-technical aspects of life. This is due either to too much academic work on technical subjects or waste of what spare time a student does have. There are three obvious remedies: (1) The work load could be decreased; (2) The number of extracurricular attractions could be increased; (3) The number of required and elective humanities courses could be increased to broaden the interests of the students.

The first remedy is impractical as long as there is no assurance that the expanded free time will be used constructively, and there is no conclusive evidence that the present load is too great to permit better participation in other phases of the individual's development. The second seems rather futile in the light of the present poor attendance at events scheduled by many Y groups such as the lunch clubs and the public affairs committee, all of which indicates a basic lack of interest on the part of the students. The third, then, although decidedly slight in its immediate effects, seems to be the only practical solution, and basic to effecting the others.

Life, it seems to us, is not simply a matter of solving difficult technical problems. Rather, the human problems are at least equally important; even complex technical problems cannot be solved today without the collaboration of a number of scientists. But, fortunately, the same basic aptitudes of reasoning and imagination can be applied to practically every problem of life which one finds so useful in calculus problems. The question now is how to communicate this idea to the Caltech student. If the suggested expansion in the humanities program were successful in its purpose, perhaps someone will have something significant to say at the dinner table.

ENGINEERING STUDENTS TO DISCUSS INDUSTRY CAREERS



Students majoring in chemical, mechanical, or electrical engineering are now scheduling appointments to obtain information on Food Machinery and Chemical Corporation, a major national producer of diversified machinery and chemicals. Company representatives will visit the campus on February 11 and 12.

Arrangements for individual interviews may be made through the local college placement office.

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IGY
(Continued from page 1)
oceans, of the complex atmosphere from the earth's surface to heights of several hundred miles, and of the sun, which virtually controls events on the earth.

The United States research program is being directed by the National Academy of Sciences. The NAS has gathered the nation's leading scientists in geophysics into technical panels, one for each major discipline, to recommend and plan projects for the IGY.

Caltech is taking an unusually large share in the United States program of research. Several of the Institute faculty are prominent members of the

NEHER
(Continued from page 1)
and South Magnetic Poles, hoping to gain new information about the enigmatic rays.

Dr. Neher has been associated with Tech for nearly thirty years. He received his PhD here in 1931, and has been a member of the faculty continuously since then. During his years of teaching he has learned the futility of trying to explain a cosmic ray theory rigorously to California Tech reporters.

He was able to provide this simplified explanation of his work. "Cosmic rays consist of

forementioned technical panels. Dr. H. V. Neher is on the panel for cosmic rays; Dr. W. H. Pickering is on the earth satellite program; Drs. Frank Press and Robert P. Sharp are on glaciology; Press and Dr. Hugo Benioff are on seismology and gravity; Dr. E. B. Nicholson is on solar activity.

Dr. Press, a staff member of Caltech's seismological research laboratory, is directing a research project himself in addition to advising the panels for seismology and gravity and for glaciology.

In talking about the IGY program, Dr. Press emphasized that its greatest importance, notwithstanding its scientific results, will be in bringing to the atten-

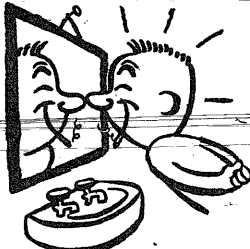
tion of more students the exciting field of geophysics. He mentioned also the importance of the program in providing a medium for international cooperation. He went on to relate the surprise felt by the NAS at Congress' willingness to appropriate the requested funds after considering these aspects of the program.

the nuclei of hydrogen, helium, and heavier element atoms, travelling at high velocities. The puzzling thing about them is their tremendous energies, exceeding that of particles from the largest man-made accelerations."
"It is known that the sun affects the number of these particles striking the earth. Surprisingly, when the sun's activity is greatest, the rays reach a minimum. 1957 and 1958 will be especially favorable for cosmic ray research, since the sun will be at its greatest activity in many years."

Press's own research is concerned with the geophysics of Antarctica. By analysis of seismic waves he hopes to determine the extent and seismic nature of the actual continent. He hopes also to determine the thickness and extent of the ice dome covering the continent, in order to estimate the amount of the earth's water bound up in Antarctic ice. His project will include gravimetric measurements which will yield further information on the nature of the material composing the Antarctic continent.

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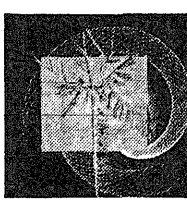
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office to arrange
an appointment*

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by Kay Sugahara

North (Cordes)

S-10 9 7 2
H-Q 7 5 3
D-A 7 4
C-9 3

East (Gustafson)

S-6 5 3
H-10
D-10 9 8 3
C-Q 10 6 5 4

West (Gibbs)

S-A 4
H-9 8 6
D-K Q 5
C-A K J 7 2

South (Krehbiel)

S-K Q J 8
H-A K J 4 2
D-J 6 2
C-8

The outstanding feature of today's hand is not the playing but the bidding. In the normal course of events, the north-south pair would end up at four hearts and go down one against normal defense. The south player in this situation was extremely fortunate in having a skillful partner by the name of Gene Cordes, who arranged his hand with the three of clubs among his spades, and so, when the bidding got around to him, he bid spades in preference to hearts because of his extra length. The bidding went:

North	East	South	West
P	P	1 spade	DbL
2 spades	P	3 hearts	P
3 spades	P	4 spades	DbL
Pass	P	P	

Master Clark Gibbs thought he might get four tricks so in his usual manner redoubled. When he laid his hand down South looked the dummy over. (You guess who it was). He pointed out the fact

(Continued on page 5)

The UNITED STATE PATENT OFFICE

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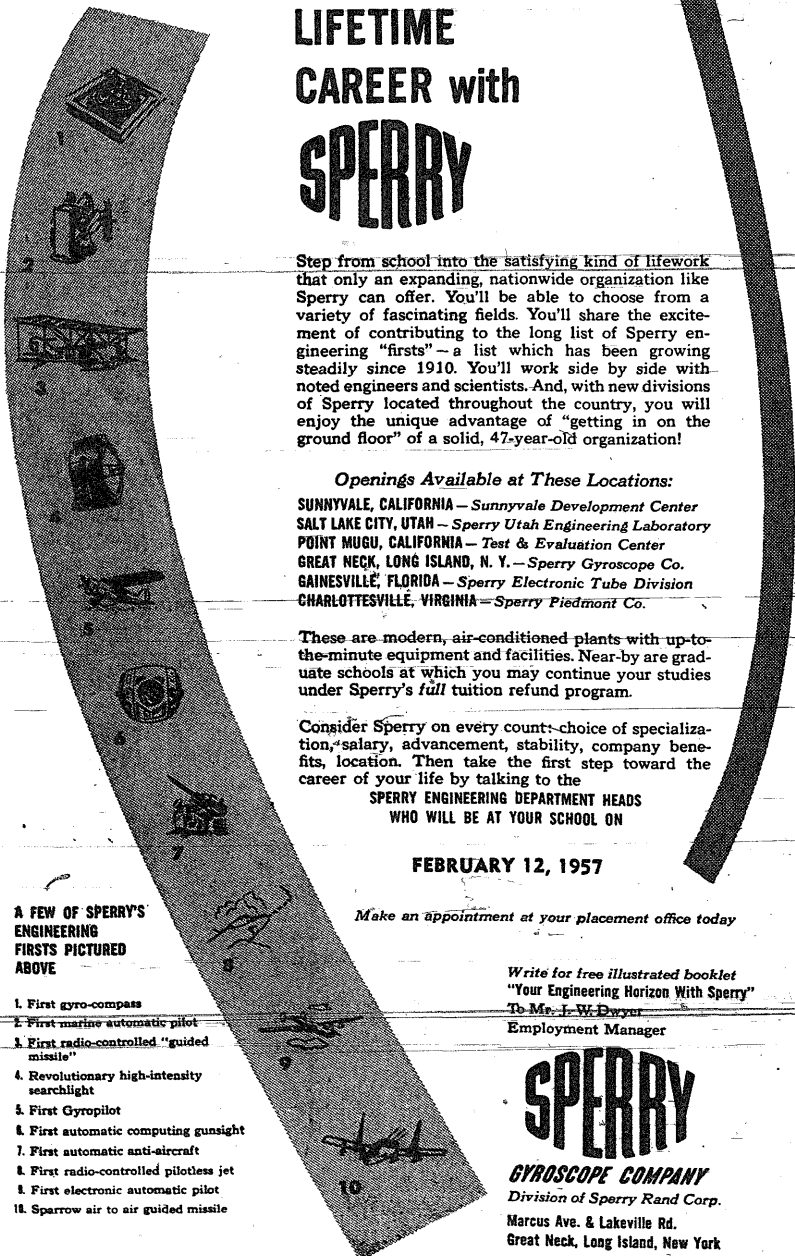
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RAVENHOLT
(Continued from page 1)

In addition to all these things, Mr. Ravenholt will speak with members of several history classes, attend special dinners almost every night, an lunch with the Geology Club next Wednesday noon. He will terminate his visit here with dinner at the student houses next Wednesday night.

BRIDGE

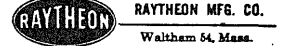
(Continued from page 4)
queen continuation, trumping in his hand. Kreb then saw that they were really at the right place and played the hand out in the following manner. He knocked out the ace of trumps and took the spade return in his own hand. After drawing the last trump he cashed the good hearts, sloughing a losing diamond from the board. He led to the ace of diamonds and conceded the last diamond trick to the defenders. Thus he lost one spade, one club and one diamond, making the contract doubled. Gibbs was furious! He was going to shout some obscenities to his partner but used his head for once, noting that Gus could beat the you-know-what out of him. We did point out, however, that if Gus had led his top diamond, the contract that Cordes was living on too much benzedrine and couldn't tell spades from clubs. He played the three of CLUBS on the King of clubs opening and followed with the nine on the could have been beaten. In a moment of brilliance, Gus pointed out that that would involve winning the lead and the only way that he could do that was if Gibbs had underled his ace-king of diamonds. Gibb so politely said that would be absurd and complacent Gus agreed.

The point we are trying to illustrate in this hand is that SOMETIMES it is advisable to be in the shorter of two suits at game and slam contracts if both the suits are solid. You will be able to draw the trumps and be able to slough losers on the longer suit.

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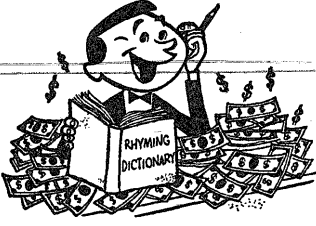
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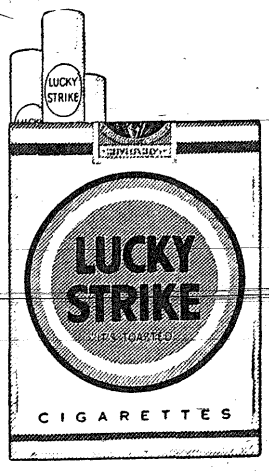
Crows' Ravens

GILMORE JENNINGS
ROLLINS COLLEGE

WHAT IS AN AGILE INSECT?

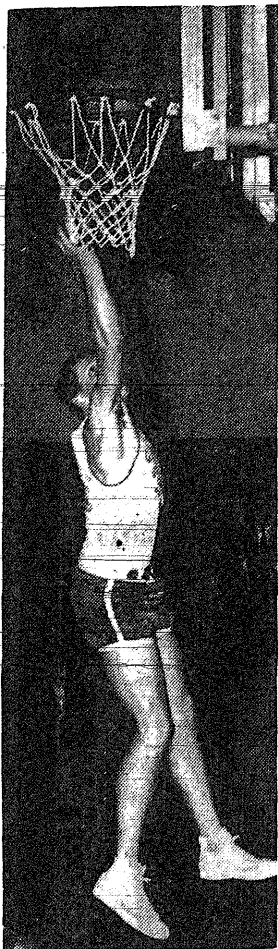
Spry Fly

WARREN NYSTROM,
U. OF WISN.



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GLENN CONVERSE drives in to score against Riverside after one of the many Caltech fast break efforts. Converse scored eleven points against UCR, and helped break up several plays by Riverside with his fine defensive work.




LARRY KRAUS, Caltech center, shows how it's done as he grabs a rebound from two Riverside defenders.

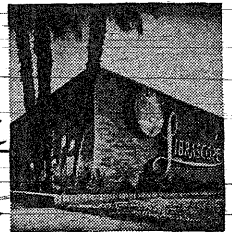
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See Glen Seltzer, Tuesday, February 19th
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Redlands tops Caltech in last game of loss streak

The Sports Corner

by Dick Van Kirk

by Steve Emanuel
Hoping to break their long losing streak, the Caltech varsity basketball team ran up a 3-0 lead in the first two minutes against the University of Redlands last Friday night at the Scott Brown gymnasium. Tech scored on a free throw by Glenn Converse, quickly followed by Fred Newman's field goal.

However, Redlands started scoring too, and led 17-10 half way through the first period. The Bulldogs played a tight defense during the whole half, intercepting or blocking many Tech shots and passes. The Beavers had a tough time breaking through the visitors' defense and as a result were forced to try many long set shots.

Coming back after halftime with a 36-17 lead under their belts, Redlands poured on even more pressure, with the result that after three minutes had passed, they led 47-21. This followed from a quick succession of baskets in which Redlands scored eight points in less than a minute. From then on, the issue was never in doubt. The Bulldogs slowed down a bit in the last half of the second period, scoring only eleven points, bringing the final score to 73-42 in favor of Redlands.

Fred Newman, who is fast establishing himself as a welcome bright spot in Caltech sports, especially basketball, was high point man for the Beavers with 14. Forward Sam Gardner led

the Bulldogs with 16 points.

CALTECH SCORING

Name	fg	ft	ttl
Newman ..G	6	2	14
Converse ..F	3	2	8
Kraus ..C	1	6	8
Welsh ..G	1	3	5
Workman ..G	1	0	2
Rauch ..C	0	1	1
Van Kirk ..G	0	1	1

REDLANDS SCORING

Gardner ..F	6	4	16
Perkins ..F	3	7	13
Poole ..G	4	2	10
Stevenson ..C	4	2	10
Pesja ..G	3	2	8
Young ..G	1	2	4
Johnson ..F	1	1	3
Kelly ..C	0	3	3
Molla ..F	1	0	2
Motter ..G	1	0	2
Smith ..F	0	2	2

After two years of struggle and hard work, the varsity basketball team finally broke their long losing streak last Saturday. For the past few years, Coach Carl Shy has stressed in practice the value of the fast break in keeping the opposing team off balance and scoring a few quick points. Time and again the Beaver hoopsters would drill in practice on just that phase of the game. Throughout the long losing streak, however, the Caltech fast break was noted by the complete absence of its use in an actual game. Last Saturday the Caltech players finally tried the fast break in earnest, and it really paid off. Maybe we'll see a running basketball team representing Caltech the rest of the season, since they've had so much success with that style of play. Incidentally, against L. A. State on Monday, Caltech again used a fast break to turn into a close game what most prognosticators thought would be a complete rout.

* * * *

Plug of the week dept. . . . Don't forget the Interhouse track meet this Saturday. It's a chance to see some future varsity runners in action. Come out and support your house team.

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WRITE: SCIENTIFIC STAFF DIRECTOR, LOS ANGELES 54, CALIF.

L.A. State halts Beaver win streak at one game, 63-49

Caltech's Beavers had their win streak snapped at one game at the hands of Los Angeles State in Scott Brown gym on Monday. The score was 63-49 and was at least as close as indicated. Before the game started the Diablos loomed as the strongest foe that the Beavers would have to meet all year.

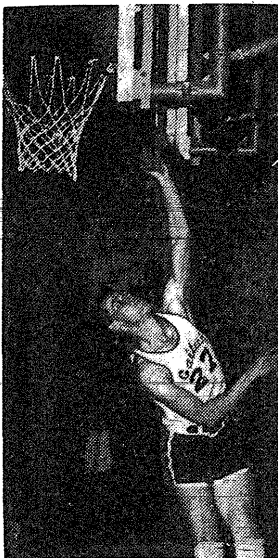
The first quarter told a story of the pre-Riverside winless Beavers. The Beavers kept up with the Diablos for the first four field goals. With the score 4-4 Tech faded quickly, until the first quarter ended with L. A. State sporting a comfortable 18-6 margin.

At this point the Beavers came alive. Led by Fred Newman and Larry Krause, the Beavers played their best ten minutes of the season. Just before halftime they pulled to within three points of the Diablos, 31-28.

Near the end of the game,

the Tech squad chopped a 17 point Diablo lead to 9 points, 58-49. Forward Howie Bloomberg and center Herb Rauch were the main sparks in the last minute rally. The strong Staters added five more points through an almost too eager Beaver defense to end the game.

JIM WELSH, left, Beaver hoop captain, is all alone as he drives in to score one two of his twelve points against Riverside. Welsh was a thorn in the side of the Riverside players all night as he led the Beaver fast break.



Frosh Sports Roundup

by Dave Singmaster and R. V. Kirk

FT% 42 67
Rebounds 17 37

Last weekend the Frosh played two games at home. Friday night they hosted the League-leading Redlands Bull Pups. After five minutes Caltech trailed only 4-6, but Redlands pushed to a 30-8 lead late in the first half. The Beavers rallied with eleven straight points to move to a 30-19 score at halftime.

The second half saw the Bullpups score 12 straight points, hitting 6 to 7 shots from the floor. Redlands pulled away to an easy 64-32 win. Mel Holland was high scorer for Caltech with eleven points.

Saturday night the Beavers met a fraternity team from Pasadena Nazarene College. The game was extremely ragged on both sides, but the Kappa Phi Kappas from Paz Naz held together for a 58-46 win. Len Maley scored 14 and Dave Blake more 12 for Caltech. Holland and Lee Hood, erstwhile guards for the Beaver frosh, did not see their way clear to show up for the game, and were out of town on trips of some sort.

Statistics		CIT		KOK	
FG%	26	28	38	38	38
Rebounds	51	39	40	40	40
FT%	67	67	67	67	67

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