

# The 1923 Big "T"

## The Big "T"

**A**T dusk, when cool sweet breezes whisper low  
And the golden sunlight purples in the West,  
When all is peaceful, and the world's at rest,  
My heart turns to that mountain all aglow  
Where gleams the chiseled T o'er lands below.  
An over-powering wonder fills my breast—  
What means the letter carved on the mountain crest?  
I ask. Soon Nature speaks, in measures slow:  
It is the symbol of a manly code  
Of honor, truth, and courage in the right;  
A goal for only fearless men to seek.  
Go valiantly onward, follow always the road  
Of honest life, guided by the light  
That shines eternally from yonder peak.

—OLIVER SCOTT '25.

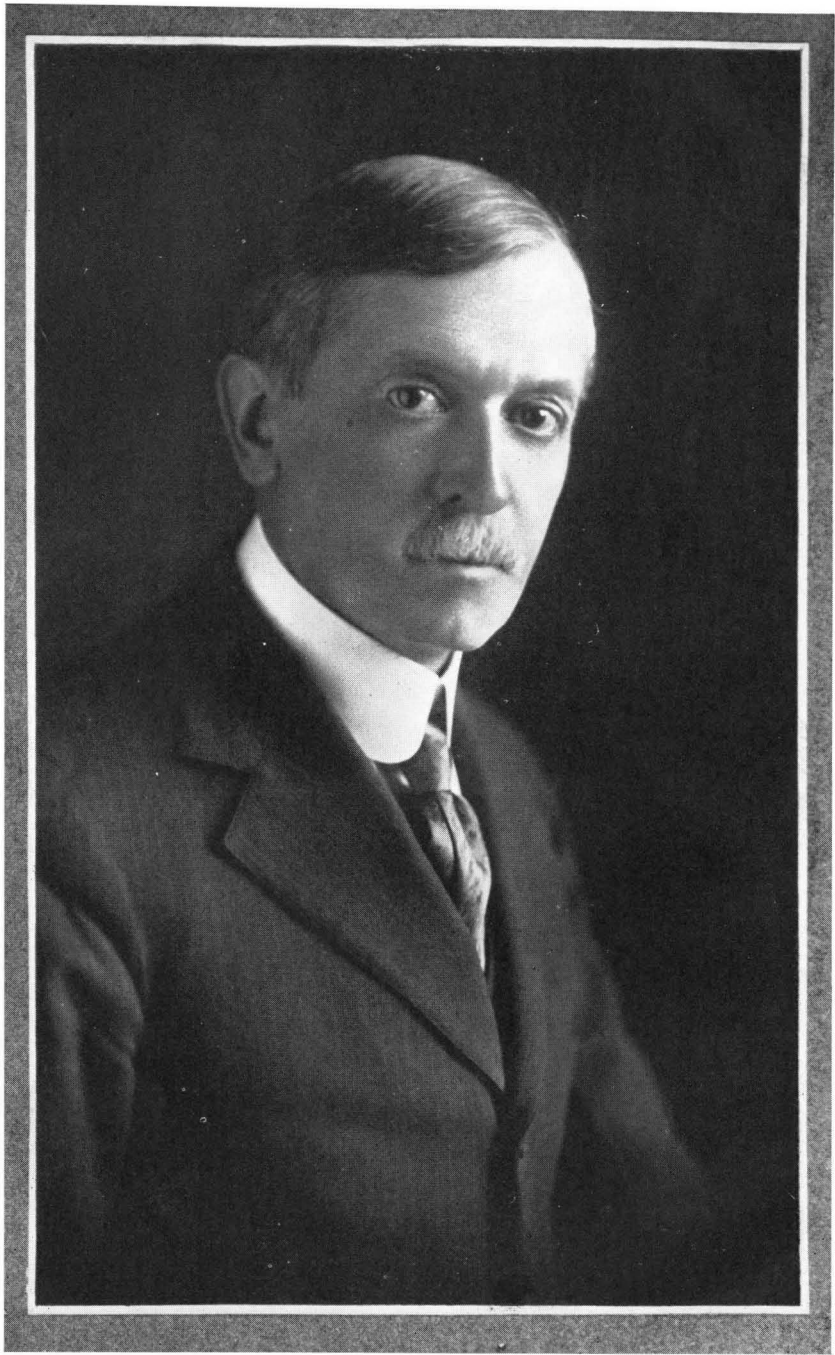
THE BIG

“T”

1923

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*June 1923*



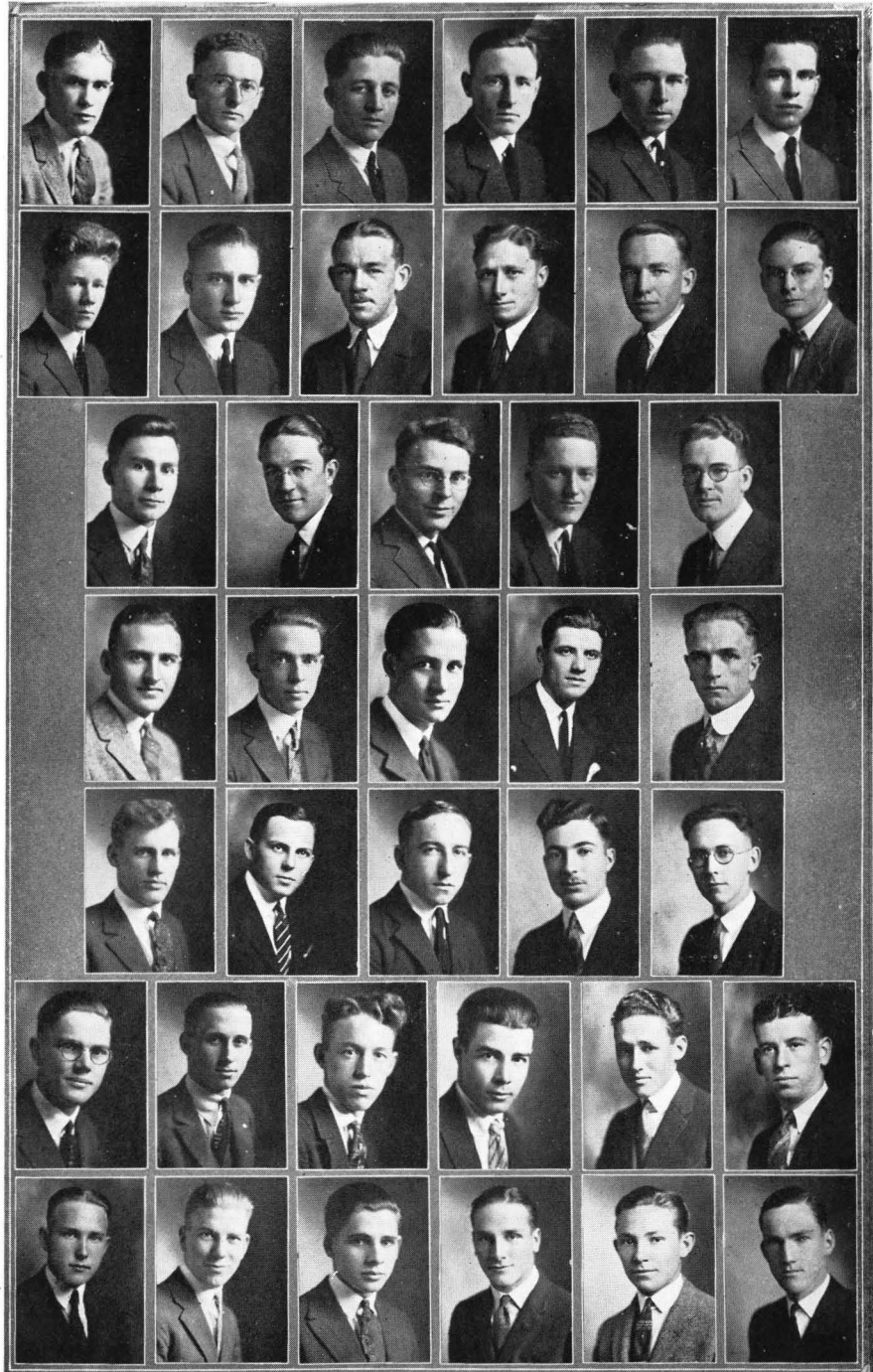
*Four*

To  
Dr. Arthur A. Noyes  
In Appreciation of His Services  
to the Institute  
This Book is Respectfully  
Dedicated

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BIG T 1923

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CALIFORNIA INSTITUTE OF TECHNOLOGY, PASADENA

To the Associated Student Body:

You have asked me, for publication in your 1923 Annual, for a statement of the aims of the Institute.

After very careful consideration, the Trustees, some years ago, decided to develop an institution of *limited numbers*, dominated by the creative spirit, saturated with the *research atmosphere*, providing exceptional facilities for continuous and intimate contact under the most wholesome living conditions between students and faculty, and students and students—an institution in whose engineering, scientific and cultural work much greater emphasis is thrown upon the fundamental subjects of physics, chemistry and mathematics than has been common in technical schools of the United States, and in which, at the same time, men come under much better intellectual, cultural and spiritual influences than have heretofore existed in technical schools, and from which leaders not only of the highest technical proficiency, but of the broadest ideals and of the largest capacity for service might be turned out.

Since, in the last analysis, the progress of civilization is determined by the very few men of vision and capacity which each age produces, there is imperative need in this country for some institutions which furnish very exceptional opportunities for very exceptional men.

The reasons for building the education furnished by the Institute upon a broad scientific foundation are as follows:

This age is primarily a scientific and industrial one. Its main-springs are all found in the sciences, particularly in the physical sciences.

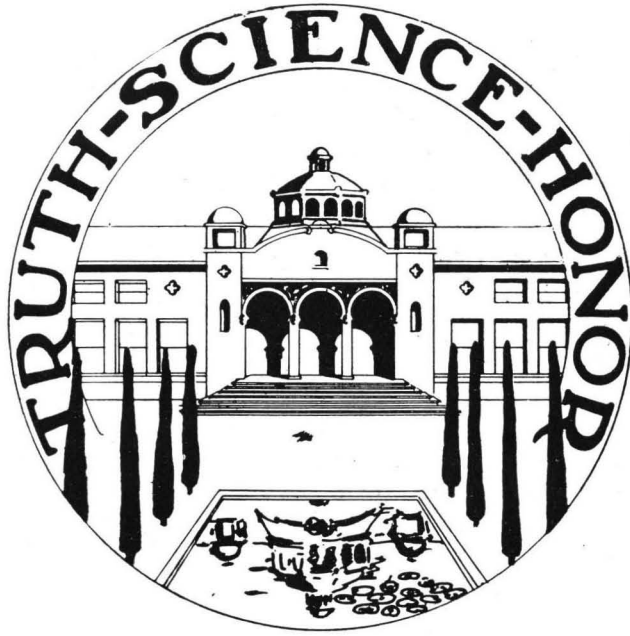
From the standpoint of discipline alone, there is no training in objective analytical thinking, or in honesty and soundness of judgment which is comparable with the training furnished by the mathematical and physical sciences.

America's success in the past has been due to a large extent to her vast natural resources, which have been easily accessible. But that surface wealth has already to a considerable extent been skimmed off, and she must henceforth maintain her position by developing men who have the capacity to dig in deeper veins, to create new processes, to eliminate waste and succeed under more difficult conditions and in the face of keener competition.

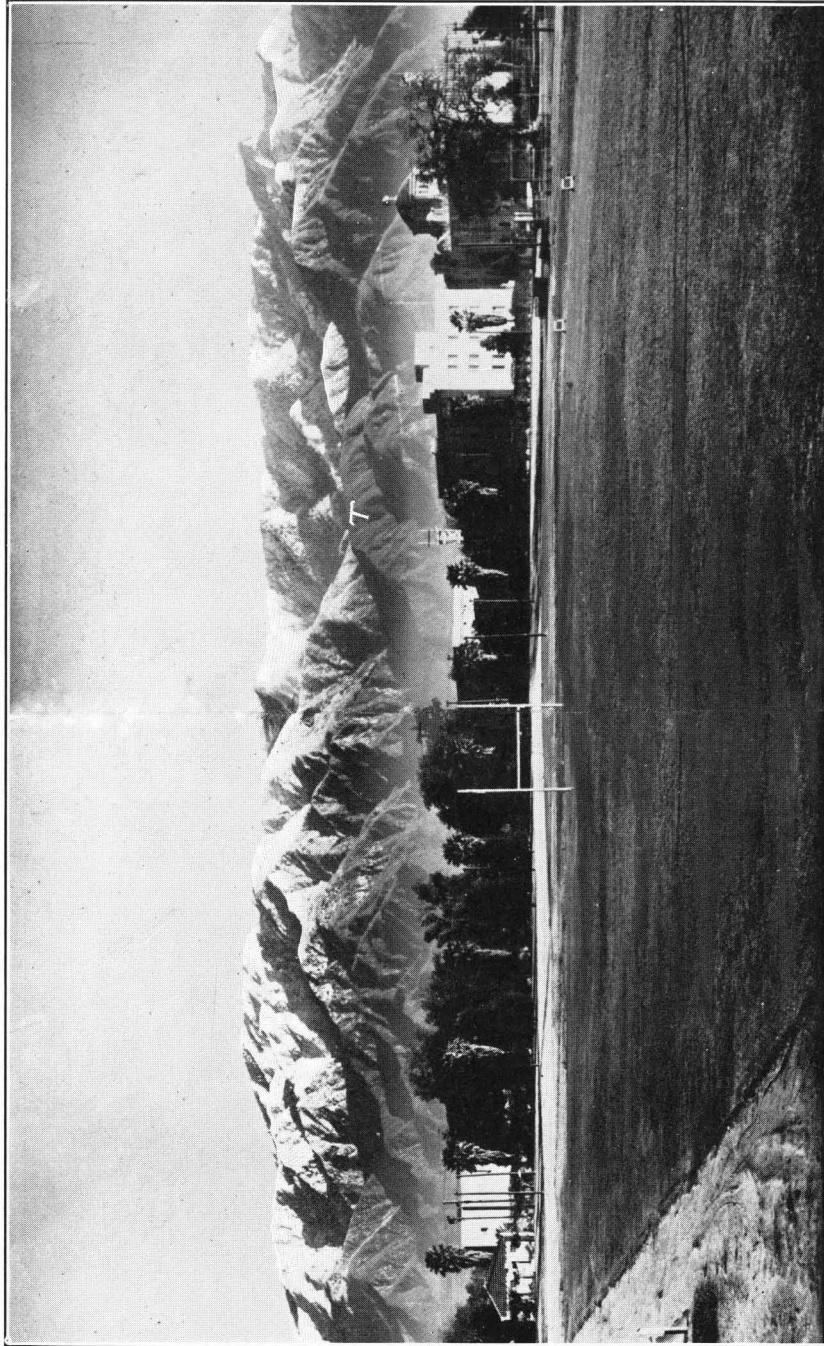
All these considerations point to the necessity of a training built about the mathematical and physical sciences, a training which may be expected to produce men who are capable of broad, straight, objective thinking, and who also possess to an exceptional degree both the research spirit and an understanding at least of the research technique—men, in a word, competent to be the real leaders of our scientific and industrial progress in the increasingly difficult days which are ahead.

—ARTHUR H. FLEMING,  
President, Board of Trustees.





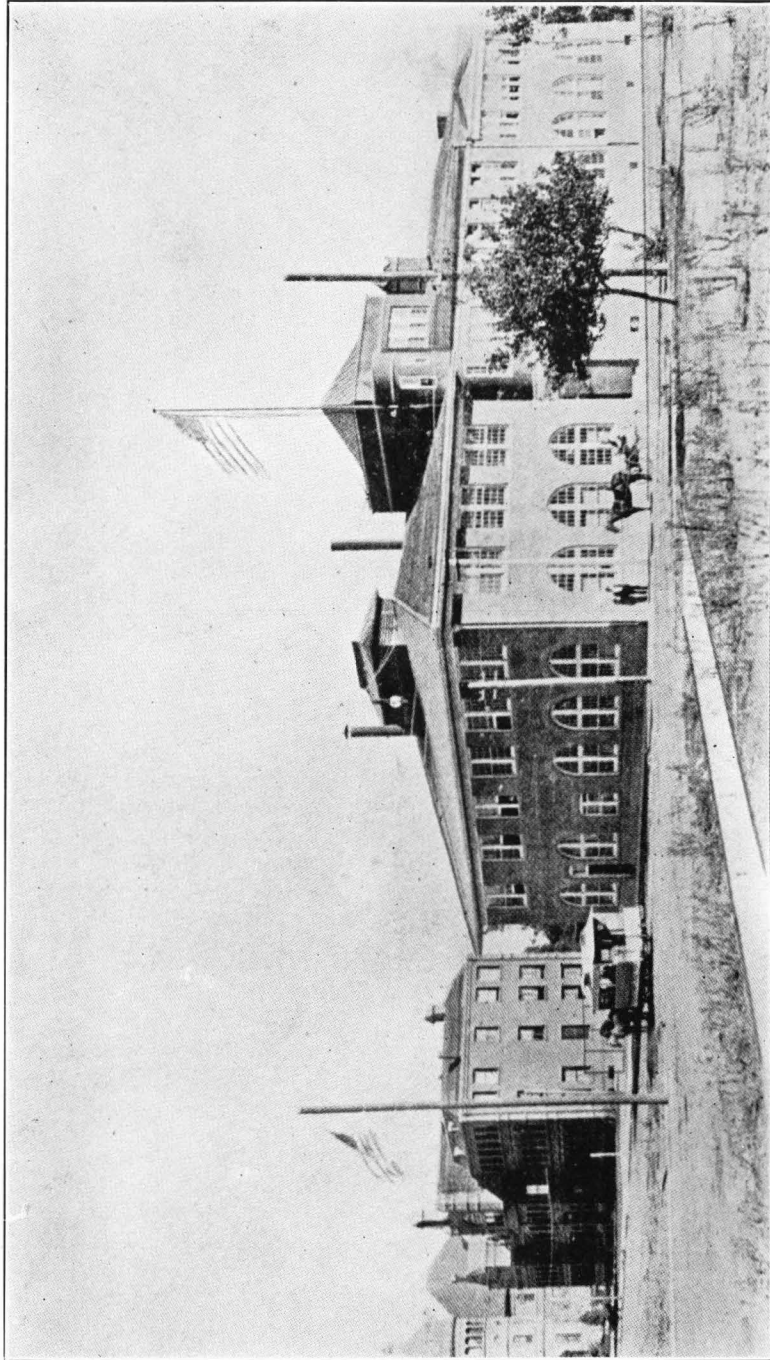
# THE INSTITUTE



## The Big "T"

You ask me, stranger, the significance  
Of that big "T" upon the hill.  
My friend, that symbolizes Tech  
For which strong men have fought fierce battles  
In the past,  
And for which, in days to come,  
Many foes will suffer dire defeat.  
Come with me and see more closely what it means.  
Here upon our campus  
You'll see a "T" of white and orange  
Proudly worn upon the dark blue jerseys of our men.  
And if you look a little closer  
You will see suspended from the watch chains of these men  
A tiny "T" of gold.  
Yes, it is the same "T" that you see on the hillside.  
It is the symbol of our Alma Mater  
For whose glory all do strive,  
And it exemplifies the fighting spirit  
Which causes men to struggle for Tech supremacy in all the things whose worth  
cannot remain in doubt.  
'Tis this true spirit, friend,  
That causes men of all the world to know and realize that Tech is good.  
Long may the big "T" upon the mountain side  
Continue to blazon forth its message from the heart of Tech to all mankind.  
Long may it stand for Truth, a Testament of TECH.

—H. FRED PETERSON '25.



THROOP POLYTECHNIC INSTITUTE AS SEEN IN 1895

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## THE INSTITUTE

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### HISTORICAL SKETCH

THE California Institute of Technology, as it exists today has taken enormous strides forward since its conception thirty-two years ago by "Father Throop," and it is in his honor that the present Throop Hall has been dedicated.

Amos G. Throop, or "Father Throop" as he was lovingly called by those of the community in which he lived came to Pasadena after he had retired from active participation in business in Chicago. Ever desirous to help others, his energies became increasingly concentrated on finding ways by which he might make living better for those with whom he came in contact.

It was for this reason that he founded, in 1891, Throop University, with Charles A. Keyes as the first President, or as it was named one year later Throop Polytechnic Institute. The school was first conducted in the Wooster block, now a part of the Hotel Green, but due to "Father" Throop's unceasing energy the Institute, by 1893, owned two new buildings, Polytechnic Hall and East Hall. These buildings are still located at Chestnut and Fair Oaks.

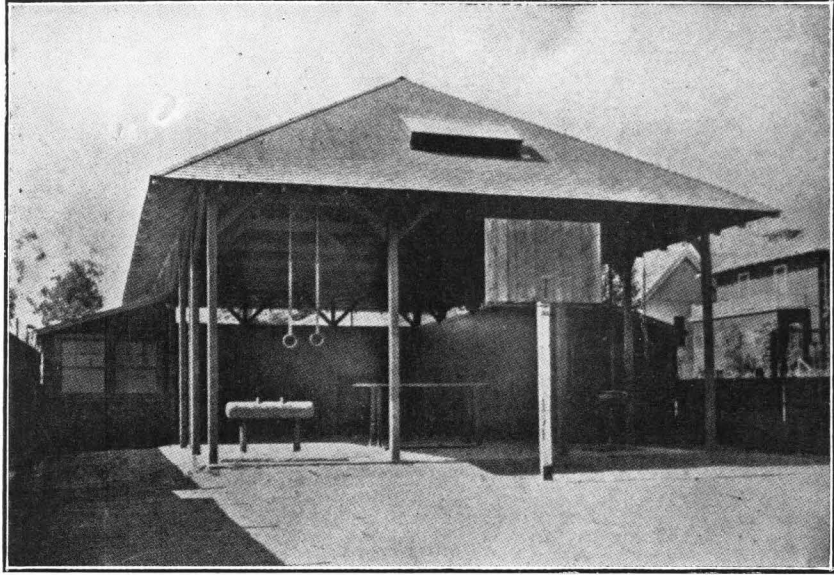
The first named building contained the shops and their laboratories, while the second contained the offices, recitation rooms, chemistry and electrical engineering laboratories, and other similar departments. As the Institute increased very rapidly in size, it was soon found necessary to enlarge both of these buildings. In 1904-05 there was a further increase in the attendance and the buildings were again enlarged. At this same time Stickney Memorial Hall, at the corner of Fair Oaks and Lincoln Avenue, was given to the Art Department of the Institute. A well equipped Out-Door Gymnasium was built for the use of the students, and in the same year a house at 289 North Los Robles containing thirty-five rooms was purchased as a dormitory. This building was the first Throop Hall.

Until this time Throop Institute was conducted chiefly as a secondary school, and naturally the amount of collegiate instruction offered was quite limited. In 1907 however, it was decided to make a change in the policy of the Institute; the elementary, preparatory and normal schools were to be discontinued and only collegiate and graduate work of the highest type was introduced. Immediately following this announcement, in 1908, the Institute was presented with the present site, on California Street, consisting of twenty acres. In 1910 the Institute along with the "Dorm," which had been built in 1908, moved to its new location. At the period of its greatest development under the old policy, that is at the end of 1907, the Institute numbered some 620 students and 50 instructors. When the Institute moved to its new location, the number of students, due to the change in policy, was only thirty-one. Since that time, the growth of the Student Body has been very rapid and the present enrollment of the Institute consists of 496 students and ninety-three professors and assistants. The first President in the new location was Dr. James A. B.

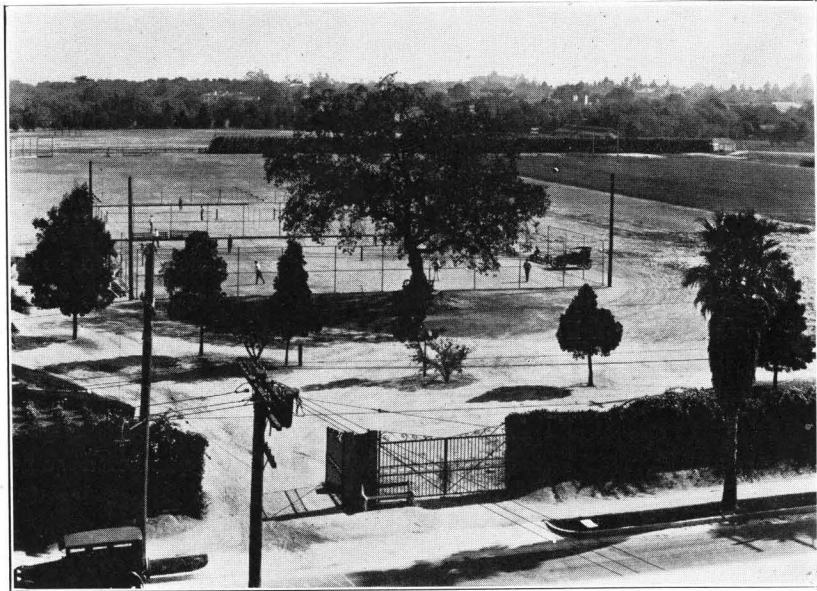
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BIG T 1923

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THE GYM IN 1906



TOURNAMENT PARK, 1923

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## THE INSTITUTE

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Scherer, who was invested with that office in 1908, and served in that capacity until September 10, 1920, when he retired due to ill health.

As the Institute was now presenting instruction only in collegiate work the name was changed to Throop College of Technology, and the college continued to be known as such until 1920. At this time, the name California Institute of Technology was adopted as one more appropriate for an institution which held as its ultimate goal the production of young men who would, in time become leaders in the scientific world.

Since the establishment on the present site, even more rapid advances have been made in physical additions, in the way of buildings, to the Institute. The construction of a Hydraulics, Steam and Applied Chemistry Laboratories mark minor improvements. In 1917 the Gates Chemical Laboratory, the gift of the Messrs. C. W. and P. G. Gates, was completed.

The new Auditorium, a very unique and attractive building capable of seating five hundred people, constructed in 1921 was another step toward the greater Institute.

The Norman Bridge Laboratory of Physics, presented to the Institute in 1922 is the most complete physics laboratory in the country and is ideally equipped for research and for under-graduate instruction. Dr. Bridge has also made provision for the Physics Library, now almost complete, and he has also presented the college with the funds for the erection of the final wing of the Laboratory. This wing, similar to the present laboratory in size, will be completed in the latter part of 1923.

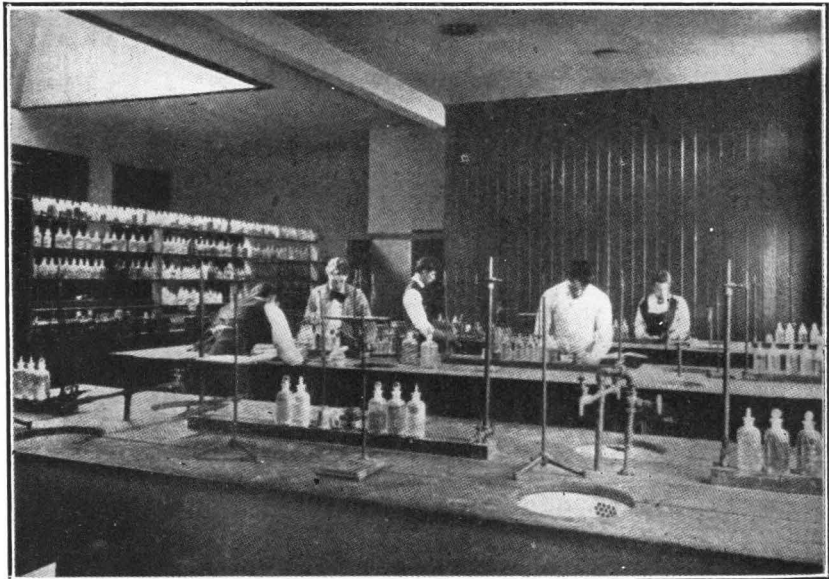
A High Tension Electrical Laboratory designed by Prof. Sorenson is being erected by the Southern California Edison Company. It is for the joint use of the Technical Staff of the Edison Company and the Research Staffs of the Institute and the Mount Wilson Observatory.

The original campus has been enlarged to twenty-eight acres by the purchase of land in the rear of the Institute so that the campus now extends the entire length of California and San Pasqual Streets, from Wilson to Hill Streets. It is on this new addition that the Faculty club house is situated.

*(Continued on Page 21)*



PHYSICS LABORATORY IN 1905



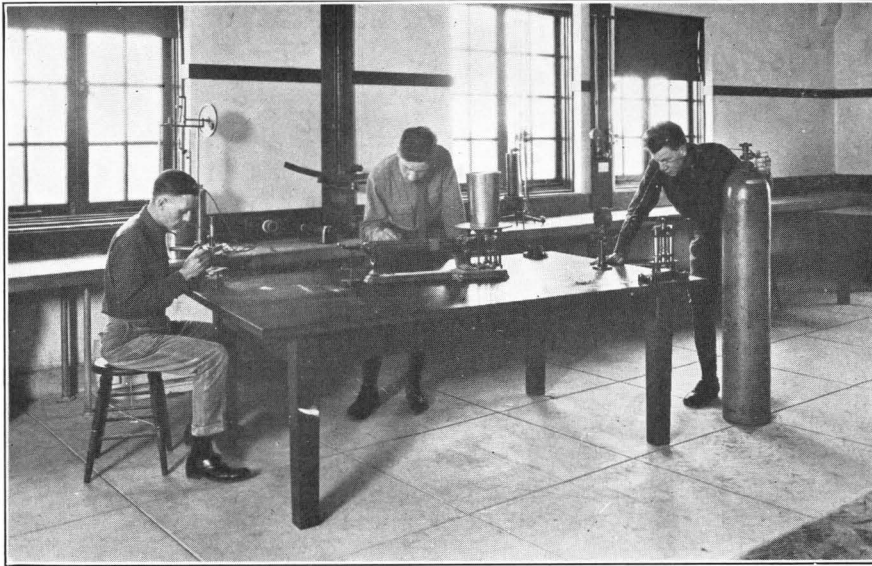
CHEMISTRY LABORATORY IN 1905



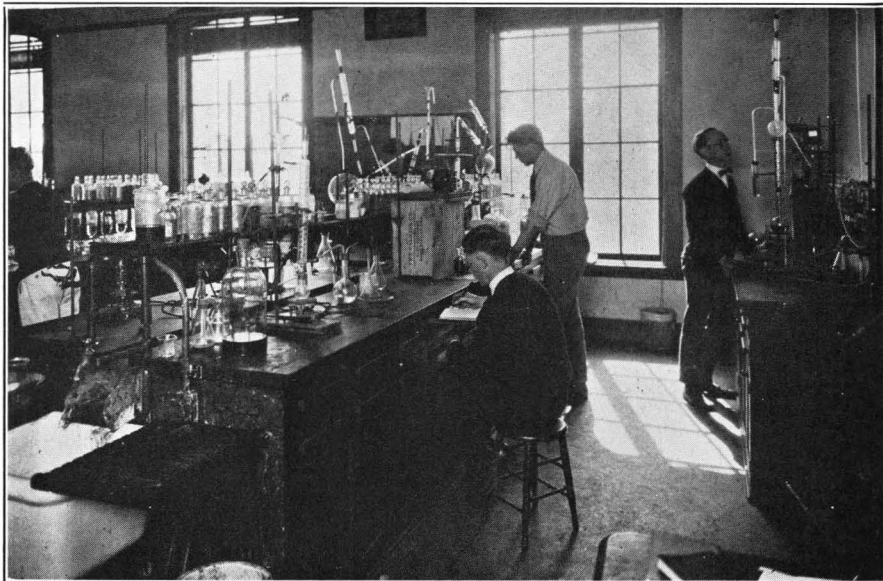
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THE INSTITUTE

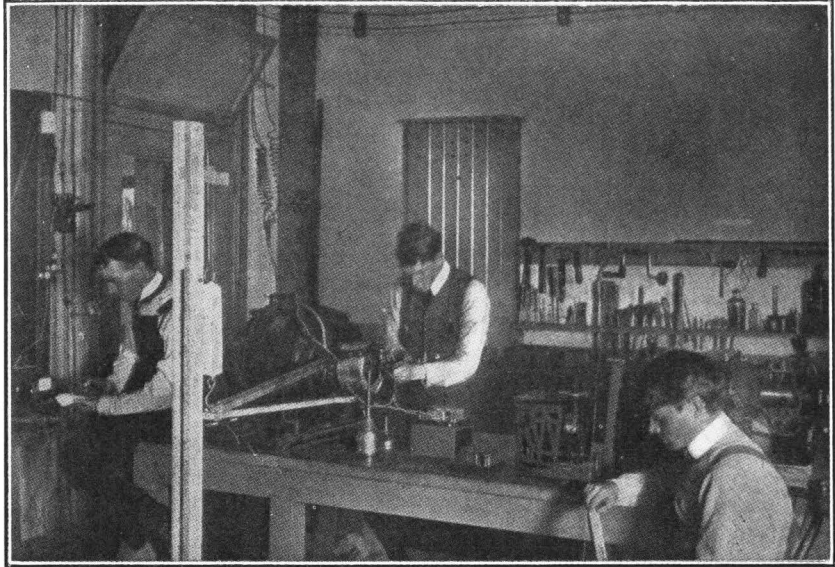
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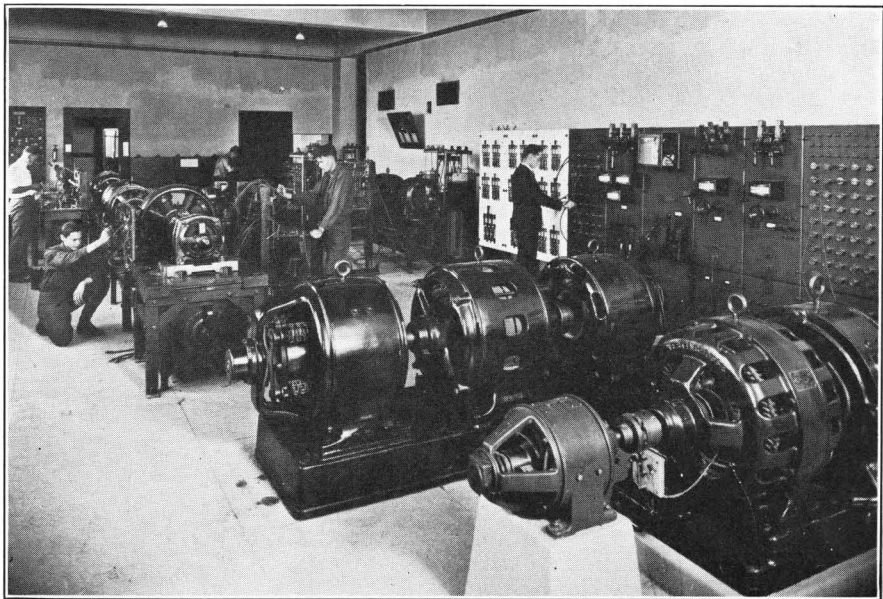
PHYSICS LABORATORY IN 1923



CHEMISTRY LABORATORY IN 1923



ELECTRICAL LABORATORY IN 1905



ELECTRICAL LABORATORY IN 1923

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## THE INSTITUTE

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### Historical Sketch--Continued

At the same time that these advances have been made in the equipment of the Institute, the teaching staff has also been increased and improved. Dr. Arthur A. Noyes, director of the Gates Chemistry Laboratory, first came to the Institute in 1916. During his early connection with the Institute, he was here for only short periods, but in 1919 he resigned from the Massachusetts Institute of Technology, after many years of service there, and permanently attached himself to the staff of the California Institute of Technology.

Dr. Robert A. Millikan, in 1921, gave up his connection with the University of Chicago to become the Director of the Norman Bridge Laboratory of Physics, and Chairman of the Executive Committee of the Institute.

Associated in this far reaching plan of research and investigation are to be found, Dr. C. G. Darwin formerly of the University of Cambridge, England; Dr. Paul Epstein formerly of the Universities of Zurich, Switzerland, and Leiden, Holland; Dr. Richard C. Tolman former Director of the United States Fixed Nitrogen Research Laboratory, Washington, D. C., and Dr. Paul Ehrenfest of the University of Leiden.

The Student Body itself has been very active in establishing worthwhile and beneficial precedents and traditions, since its arrival on the new campus. In 1913 the Student Body's weekly paper, the "California Tech," was first issued. This was soon followed by the publication of the annual, the "Orange and White." This name was changed to the "Big T" because it was decided that such a title was far more appropriate in that it bound the past, present and the future in one common bond of fellowship. The year 1915 saw the introduction of two new traditions; the annual Pole Rush between the two lower classes was established, and the "Big T" on the mountain was cleared.

About the same time, there was established at the Institute the greatest tradition of all, the Honor System. This tradition, as it functions at the Institute, depicts more than any other feature the fact that the California Institute of Technology is first and last a Man's College.

The Class of '24 introduced, in 1921, "Emancipation Day" as that day on which the Freshmen should publicly free themselves from their coils of bondage. This was followed by two more traditions; the Beaver was chosen as the college mascot, and the Court of Traditions was established in 1923.

After thus surveying the rapid advance of the Institute in the short thirty-two years of its existence, it is indeed evident that "Tech", as she is so familiarly known to all who love and respect her, is indeed carving for herself a niche, indisputably her own, in the scientific world of men.

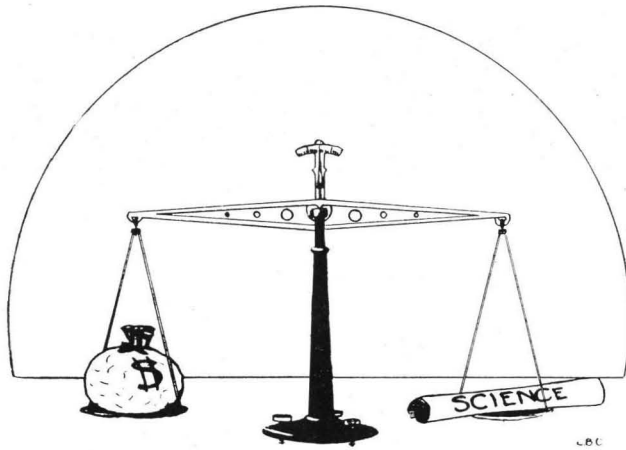


## Faculty Club

**A**MONG the most recent of campus organizations is the Faculty Club, the establishment of which was made possible through the acquisition by the Institute of the adjoining grounds and residence known as the Niemeyer Estate.

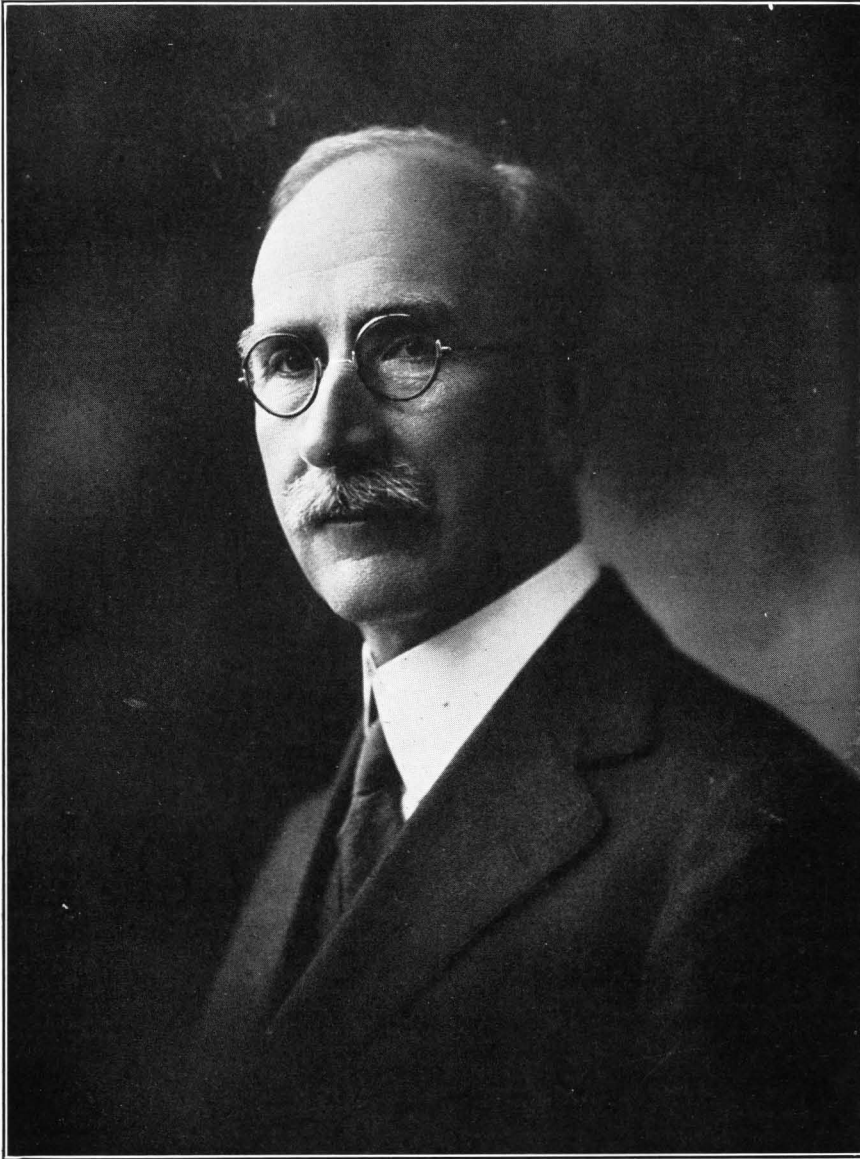
In addition to serving as an asylum for a limited number of the bachelor constituency, the attractive home is used as headquarters for faculty luncheons and social gatherings in general. The privileges of the club are extended to the staff of the Mount Wilson observatory and laboratory.

The officers of the club are: C. K. Judy, president; G. A. Laing, secretary-treasurer; and a house manager whose tenure of office varies with the popularity of the meals.

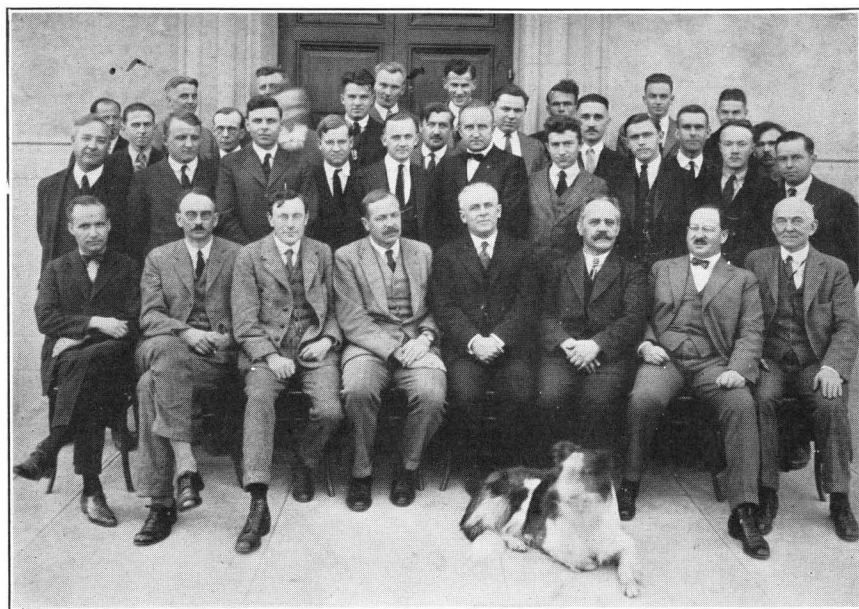


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President of the Board of Trustees



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A.B., Oberlin College, 1891; A.M., 1893; Ph.D., Columbia University 1895; Sc.D.,  
(Hon.) Oberlin College, 1911; Sc.D., (Hon.) Northwestern University, 1913; Sc.D.,  
University of Pennsylvania, 1915; Sc.D., Amherst College, 1917; Sc.D., Columbia  
University, 1917.

HARRY BATEMAN, Ph.D.—  
*Professor of Mathematical Physics and Aeronautical Research*  
B.A., Cambridge University, 1903; M.A., 1906; Ph.D., Johns Hopkins University, 1913.

PAUL EPSTEIN, Ph.D.—*Professor of Physics*  
C.Sc., Moscow University, 1906; M.Sc., 1909; Ph.D., University of Munich, 1914.

LUCIEN HOWARD GILMORE, A.B.—*Professor of Physics*  
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CHARLES GALTON DARWIN, M.A.—*Professor of Physics*  
M.A., Cambridge University, Cambridge, England, 1911.

EARNEST CHARLES WATSON, Ph.D.—*Associate Professor of Physics*  
Ph.D., Lafayette College, 1914.

WALTER TICKNOR WHITNEY, Ph.D.—*Assistant Professor of Physics*  
B.S., Pomona College, 1910; M.S., 1912; Ph.D., University of Chicago, 1916.

JAMES B. FRIAUF, A.B.—*Instructor in Physics*  
A.B., University of Montana, 1918.



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IRA SPRAGUE BOWEN, A.B.—*Instructor in Physics and Research Assistant*  
A.B., Oberlin College, 1919.

*Ira S. Bowen.*

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B.A., Cornell University, 1918; Ph.D., 1922.

EDWARD H. KURTH—*National Research Fellow in Physics*  
C.E., Princeton University, 1920; M.S., 1921; D.Sc., 1922.

JEUS RUD NIELSEN—  
*Fellow in Physics of the American-Scandinavian Foundation*  
Cand. Mag., University of Copenhagen, 1919.

ALBERT ADAMS MERRILL—*Instructor in Aeronautics*

ROBERT BIGHAM BRODE, B.S.—*Teaching Fellow in Physics*  
B.S., Whitman College, 1921.

ROBERT CADY BURT, E.E.—*Teaching Fellow in Physics*  
E.E., Cornell University, 1921.

G. HARVEY CAMERON, B.Sc.—*Assistant in Physics*  
B.Sc., University of Saskatchewan, 1922.

JESSE WILLIAM MONROE DUMOND, M.S.—*Teaching Fellow in Physics*  
B.S., California Institute of Technology, 1916; M.S. in E.E., Union College, 1918.

HUGH KENNETH DUNN, A.B.—*Assistant in Physics*  
A.B., Miami University, 1918.

CARL FERDINAND EYRING, M.A.—*Assistant in Physics*  
A.B., Brigham Young University, 1912; M.A., University of Wisconsin, 1915.

ALEC LLOYD GREENLEES, M.A.—*Teaching Fellow in Physics*  
M.A., Queen's University, 1920.

FRANCIS LOGAN HOPPER, B.S.—*Assistant in Physics*  
B.S., California Institute of Technology, 1922.

CHARLES B. KAZDA, M.S.—*Teaching Fellow in Physics*  
M.S., University of Chicago, 1921.

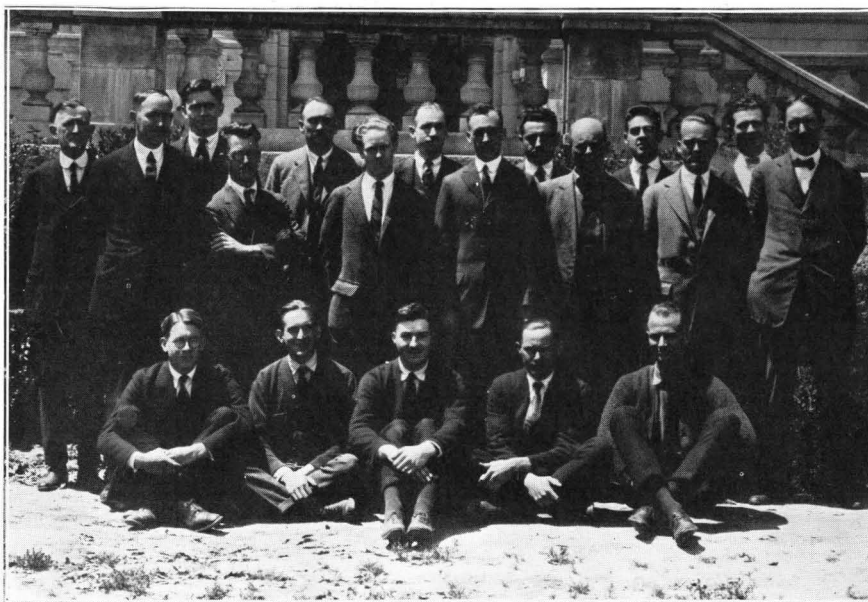
ARTHUR LOUIS KLEIN, B.S.—*Teaching Fellow in Physics*  
B.S., California Institute of Technology, 1921.

HALLAM EVANS MENDENHALL, B.S.—*Assistant in Physics*  
B.S., Whitman College, 1921.

RUSSELL MORLEY OTIS, B.S.—*Research Fellow in Physics*  
B.S., California Institute of Technology, 1920.

SINCLAIR SMITH, B.S.—*Teaching Fellow in Physics*  
B.S., California Institute of Technology, 1921.

RALPH EDGAR WINGER, A.B.—*Assistant in Physics*  
A.B., Baker University, 1914.



## Department of Chemistry

ARTHUR AMOS NOYES, Ph.D., LL.D., Sc.D.—

*Director of the Gates Chemical Laboratory*

S.B., Massachusetts Institute of Technology, 1886; S.M., 1887; Ph.D., University of Leipzig, 1890; LL.D., University of Maine, 1908.

STUART JEFFERY BATES, Ph.D.—*Professor of Physical Chemistry*

B.A., McMaster University, Toronto, 1907; M.A., 1909; Ph.D., University of Illinois, 1912.

JAMES EDGAR BELL, Ph.D.—*Professor of Chemistry*

S.B., University of Chicago, 1905; Ph.D., University of Illinois, 1913.

RICHARD CHACE TOLMAN, Ph.D.—

*Professor of Physical Chemistry and Mathematical Physics*

S.B. in Chemical Engineering, Massachusetts Institute of Technology, 1903; Ph.D., 1910.

JAMES HAWES ELLIS, Ph.D.—*Associate Professor of Physical-Chemical Research*

B.S., Massachusetts Institute of Technology, 1912; Ph.D., 1916.

WILLIAM NOBLE LACEY, Ph.D.—*Associate Professor of Chemical Engineering*

A.B. in Chemical Engineering, 1911, and Chemical Engineer, 1912, Leland Stanford Junior University; M.S., 1913, and Ph.D., 1915, University of California.

HOWARD JOHNSON LUCAS, M.A.—*Associate Professor of Organic Chemistry*

B.A., Ohio State University, 1907; M.A., 1908.

ERNEST HAYWOOD SWIFT, M.S.—*Instructor in Analytical Chemistry*

B.S. in Chemistry, University of Virginia, 1918; M.S., California Institute of Technology, 1920.

Twenty-six

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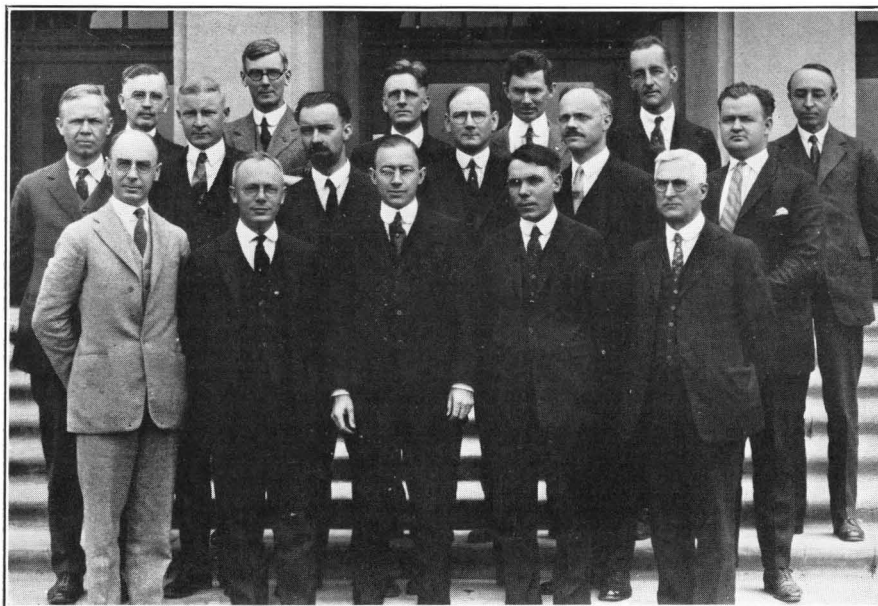
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- RICHARD MILTON BOZORTH, Ph.D.—*Research Fellow in Chemistry*  
A.B., Reed College, June, 1917; Ph.D., California Institute of Technology, 1922.
- DAVID FREDERICK SMITH, Ph.D.—*Research Fellow in Chemistry*  
B. S., California Institute of Technology, 1920; Ph.D., 1922.
- REINHARDT SCHUHMANN, M.A.—*duPont Fellow in Chemistry*  
B.A., University of Texas, 1910; M.A., 1921.
- GORDON ALBERT ALLES, B.S.—*Research Assistant, Biochemical Research*  
B.S., California Institute of Technology, 1922.
- RICHARD BADGER, B.S.—*Teaching Fellow in Chemistry*  
B.S., California Institute of Technology, 1921.
- PAUL HUGH EMMETT, B.S.—*Assistant in Chemistry*  
B.S., Oregon Agricultural College, 1922.
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B.S., College of the City of New York, 1920; M.A., Columbia University, 1921.
- LINUS CARL PAULING, B.S.—*Assistant in Chemistry*  
B.S., Oregon Agricultural College, 1922.
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B.S., California Institute of Technology, 1921.
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- W. HOWARD CLAPP, E.M.—*Professor of Mechanism and Machine Design*  
E.M., University of Minnesota, 1901.
- ROBERT L. DAUGHERTY, M.E.—  
*Professor of Mechanical and Hydraulic Engineering*  
A.B. in Mechanical Engineering, Leland Stanford Junior University, 1909; M.E., 1914.
- FREDERIC W. HINRICHS, JR., A.B.—*Associate Professor of Mechanics*  
A.B., Columbia University, 1902; Graduate of the United States Military Academy,  
West Point, 1902.
- ROBERT TALBOT KNAPP, B.S.—*Instructor in Mechanical Engineering*  
B.S., Massachusetts Institute of Technology, 1920.
- FRANCIS WILLIAM MAXSTADT, M.E., E.E.—*Instructor in Mechanical Engineering*  
M.E., Cornell University, 1916; Certificate of E.E., 1916.
- WALTER WILLIAMS OGIER, JR., B.S.—  
*Instructor in Mechanical Engineering, Assistant Director of Music*  
B.S., Throop College of Technology, 1919.
- HALLAN NEIL MARSH, B.S.—*Teaching Fellow in Engineering*  
B.S., California Institute of Technology, 1922.
- WILLIAM JACOB AUBURN, M.E.—*Instructor in Engineering Drawing*  
M.E., Cornell University, 1897.
- CLARENCE VINCENT ELLIOTT, M.E.—*Instructor in Engineering Drawing*  
M.E., Cornell University, 1911.
- ARTHUR FREDERICK HALL—  
*Instructor in Pattern Making and Machine Shop Practice (Part Time)*
- WALTER WILLIAM MARTIN—*Instructor in Wood Working (Part Time)*  
Graduate, Normal Arts Department, Throop Polytechnic Institute, 1900.
- OSCAR LESLIE HEALD—*Instructor in Forging (Part Time)*  
Graduate, Normal Arts Department, Throop Polytechnic Insitute, 1903.
- GEORGE DANIEL HENCK—*Instructor in Pattern Making (Part Time)*  
Graduate, Manual Arts Department, Throop Polytechnic Institute, 1908.

DEPARTMENTS OF MILITARY AND PHYSICAL EDUCATION

HANS KRAMER, First Lieutenant, Corps of Engineers, U. S. Army—  
*Professor of Military Science and Tactics*  
Graduate, U. S. Military Academy, West Point, with rank of Second Lieutenant,  
Corps of Engineers, 1918.

DOSWELL GULLATT, First Lieutenant, Corps of Engineers, U. S. Army—  
*Assistant Professor of Military Science and Tactics*  
Graduate, U. S. Military Academy, West Point, with rank of Second Lieutenant,  
Corps of Engineers, 1918.

JOSEPH LARACY, Master Sergeant, Engineers, U. S. Army—  
*Assistant, Department of Military Science and Tactics*

LOUIS H. BAILEY, Staff Sergeant, Engineers, U. S. Army—  
*Assistant, Department of Military Science and Tactics*

WILLIAM L. STANTON, B.A.—*Physical Director*  
B.A., Dickinson College, 1903.

HAROLD Z. MUSSELMAN, A.B.—*Instructor in Physical Education*  
A.B., Cornell College, 1920.

LEROY B. SHERRY, M.D.—*Examining Physician*  
A.B., University of Illinois, 1910.

GEORGE J. STARR, D.O.—*Physician, Department of Physical Education*  
D.O., College of Osteopathic Physicians and Surgeons, Los Angeles, 1921.

DEPARTMENT OF ELECTRICAL ENGINEERING

ROYAL WASSON SORENSEN, B.S. in E.E.—*Professor of Electrical Engineering*  
B.S. in Electrical Engineering, University of Colorado, 1905.

GEORGE FORSTER, E.E.—*Assistant Professor of Electrical Engineering*  
E.E., Lehigh University, 1914.

CHARLES EDWARD FITCH—*Assistant in Electrical Engineering*  
California Institute of Technology, Class of 1923.

JOHN RAINSFORD NORTH—*Assistant in Electrical Engineering*  
California Institute of Technology, Class of 1923.

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FACULTY

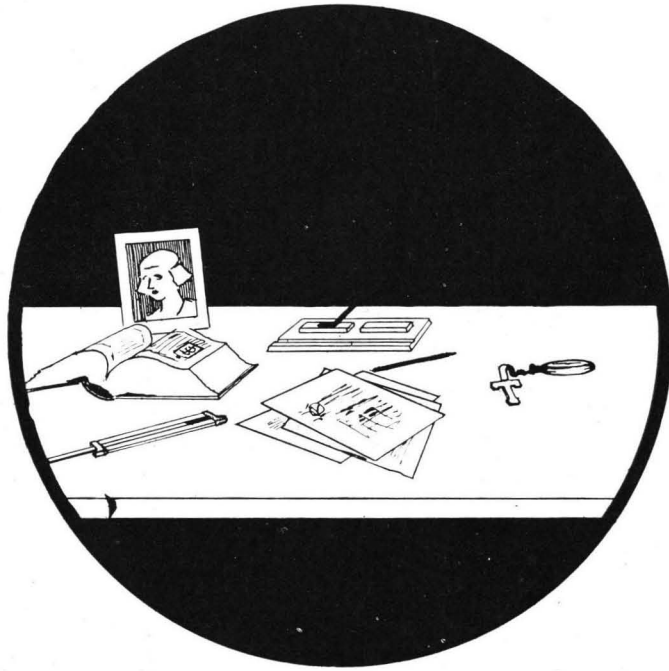
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BIG T 1923

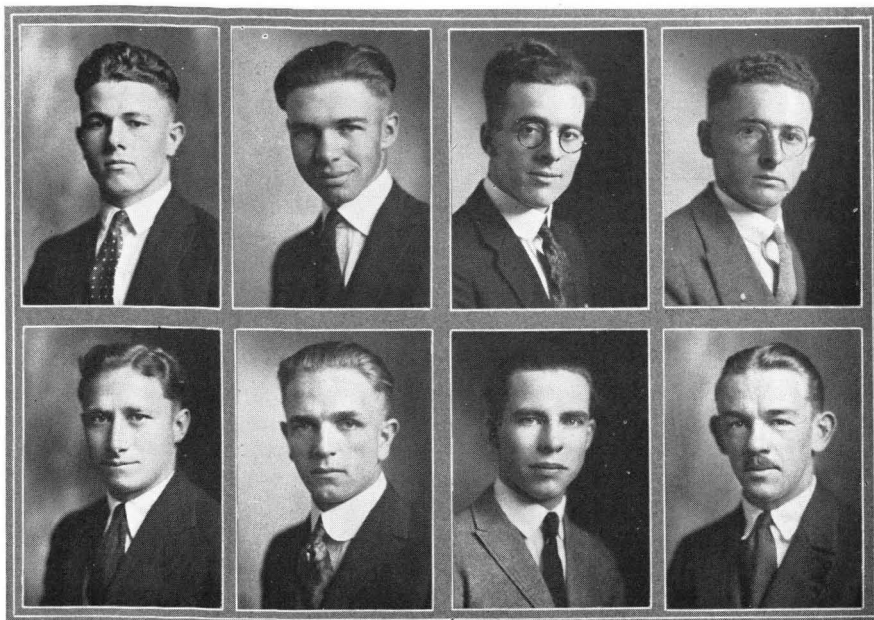






# CLASSES

BIG T 1923



HARRIES  
WALKER

RAMSEYER  
ALCORN

STORMS  
BANGHAM

ROTH  
SKINNER

CLASS OF 1923

OFFICERS

*President* - - - - DAVID G. HARRIES, JR.  
*Vice-President* - - - - GEORGE N. RAMSEYER  
*Secretary-Treasurer* - - - CHARLES A. STORMS  
*Athletic Manager* - - - - LAWRENCE P. ROTH

BOARD OF CONTROL

C. PERRY WALKER                      MAX B. ALCORN  
 BERNARD G. EVANS                      WILLIAM L. BANGHAM

COMMITTEES

CLASS DAY

RICHMOND H. SKINNER (*Chairman*)  
 BERNARD G. EVANS  
 DOUGLAS A. STROMSOE  
 LOREN E. BLAKELEY  
 GEORGE T. MCKEE

DANCE

GEORGE T. MCKEE (*Chairman*)  
 C. PERRY WALKER  
 ROBERT E. WOODS

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CLASS OF 1923

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PAST OFFICERS OF THE CLASS OF 1923

FRESHMAN YEAR

*President* - - - J. E. UNDERHILL  
*Vice-President* - HENRY D. GREEN  
*Secy.-Treas.* - MERLE KIRKPATRICK

SOPHOMORE YEAR

*President* - - - - B. G. EVANS  
*Vice-President* - - R. A. VANPELT  
*Secy.-Treas.* - NORRIS BRAVENDER

JUNIOR YEAR

*President* - - - - HUBERT A. REEVES  
*Vice-President* - - CHARLES A. STORMS  
*Secy.-Treas.* - - MERLE KIRKPATRICK

BOARD OF CONTROL

DAVID G. HARRIES, JR.      DEAN FOWLER  
MAX ALCORN

HONOR KEY MEN, CLASS OF 1923

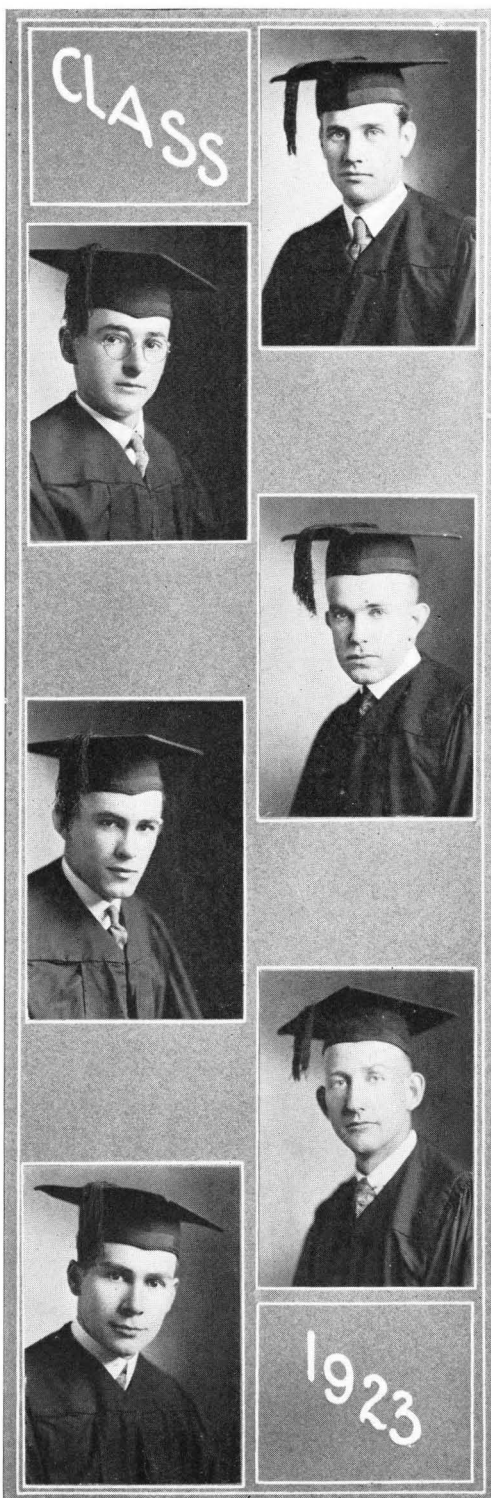
MAX ALCORN	GEORGE T. MCKEE
W. L. BANGHAM	HAROLD PRESTON
L. E. BLAKELEY	DOUGLAS A. STROMSOE
B. G. EVANS	RICHARD S. SKINNER
L. DEAN FOWLER	C. PERRY WALKER
A. C. HALL	DAVID G. HARRIES

WEARERS OF THE "T", CLASS OF 1923

HUBERT A. REEVES	FOREST L. LYNN
HAROLD A. PRESTON	DOUGLAS A. STROMSOE
RICHARD U. SEARES	L. DEAN FOWLER
BERNARD G. EVANS	RICHMOND H. SKINNER
JOSEPH ALCOCK	LYLE DILLON
DAVID G. HARRIES	DOUGLAS G. KENDALL
CHARLES S. HOWARD	H. TODD NIES
WILLARD E. BAIER	SYDNEY A. BANKS

SCHOLARSHIPS OF THE CLASS OF 1923

Freshman Travel Prize - DONALD HOLT LOUGHRIDGE  
Junior Travel Prize - - L. MERLE KIRKPATRICK and  
DONALD HOLT LOUGHRIDGE (jointly)



LYLE DILLON, Los Angeles, Calif.  
 Alias "Sparks"; Born Aug. 30, 1899;  
 Mechanical Engineering; Prepared at  
 Hollywood High School; Entered  
 Freshman year; A. S. M. E. (4);  
 Varsity Club (4); Dorm Club (1, 2);  
 Class Representative (1); S. A. T. C.  
 (1); Letterman; Tennis (4); Sports:  
 Track (1), Swimming (4).  
 ✨ ✨

LAWRENCE P. ROTH, San Gabriel, Calif.  
 Alias "Shorty"; Born Aug. 11, 1901;  
 Mechanical Engineering; Prepared at  
 Pasadena High School; Entered  
 Freshman year; Annual Staff (4);  
 A. S. M. E. (3, 4); Aero Club (3,  
 4); Rifle Team (2, 3, 4); Y. M. C.  
 A. (2, 3, 4); Second Lieutenant R.  
 O. T. C. (4).  
 ✨ ✨

PAUL M. WHITE, *Gnome Club*,  
 Pasadena, Calif.  
 Alias "Daddy"; Born July 18, 1898;  
 Prepared Oxnard High School; Entered  
 Freshman year; Dorm Club (1,  
 2); Board of Control (2); Sports:  
 Football Second Team (1, 2); Track  
 (2); Class Football (2, 3); Baseball  
 (4).  
 ✨ ✨

L. DEAN FOWLER, *Pharos*,  
 Redlands, Calif.  
 Alias "Harold Lloyd"; Born Sept. 15,  
 1900; Electrical Engineering; Pre-  
 pared at Redlands High School; Uni-  
 versity of Redlands one year; Entered  
 Sophomore year; Board of Control  
 (2, 3); Tech Staff (4); Annual  
 Staff (4); A. I. E. E. (4); Varsity  
 Club (3, 4); Y. M. C. A. (2, 3);  
 Band (3); Orchestra (3); Letter-  
 man; Track (3, 4), Captain (4).  
 ✨ ✨

FOREST L. LYNN, Los Angeles, Calif.  
 Alias "Slim"; Born March 12, 1896;  
 Electrical Engineering; Prepared at  
 Polytechnic High School, Manual  
 Arts High School, Los Angeles; Entered  
 Freshman year; A. I. E. E. (4);  
 Varsity Club (2, 3, 4); Letterman;  
 Tennis (2, 3, 4), Captain (4).  
 ✨ ✨

LOREN E. BLAKELY, *Press Club*,  
 Los Angeles, Calif.  
 Alias "Monk"; Born June 30, 1901;  
 Engineering and Economics; Pre-  
 pared at Huntington Park High  
 School; Entered Freshman year; An-  
 nual Staff (2, 3, 4); Organizations  
 Editor (4); Tech Staff (2, 3, 4);  
 S. I. P. A. Editor (4); A. I. E. E.  
 (2, 3, 4); S. A. E. (3); Glee Club  
 (3, 4); Y. M. C. A. (1, 2, 3, 4);  
 Vice President (3, 4); Editor Tech  
 Handbook (4); Orchestra (2, 3);  
 Manager (3); Band (1, 2, 3, 4);  
 Debating (4); "The Atomizer" (4);  
 Honor Key (3, 4); Sports: Football  
 (2, 3). "A bear for work."

CLASS OF 1923

CLARENCE R. OWENS, *Tau Beta Pi*,  
Sawtelle, Calif.  
Alias "Clancy", "Shiek"; Born July 14, 1901; Mechanical Engineering; Prepared at Santa Monica High School; Entered Freshman year; Annual Staff (4); Tech Staff (4); A. S. M. E. (2, 3, 4); Aero Club (3, 4); Math Club (1); Dorm Club (4); Rifle Team (2, 3, 4); First Lieutenant R. O. T. C. (4).

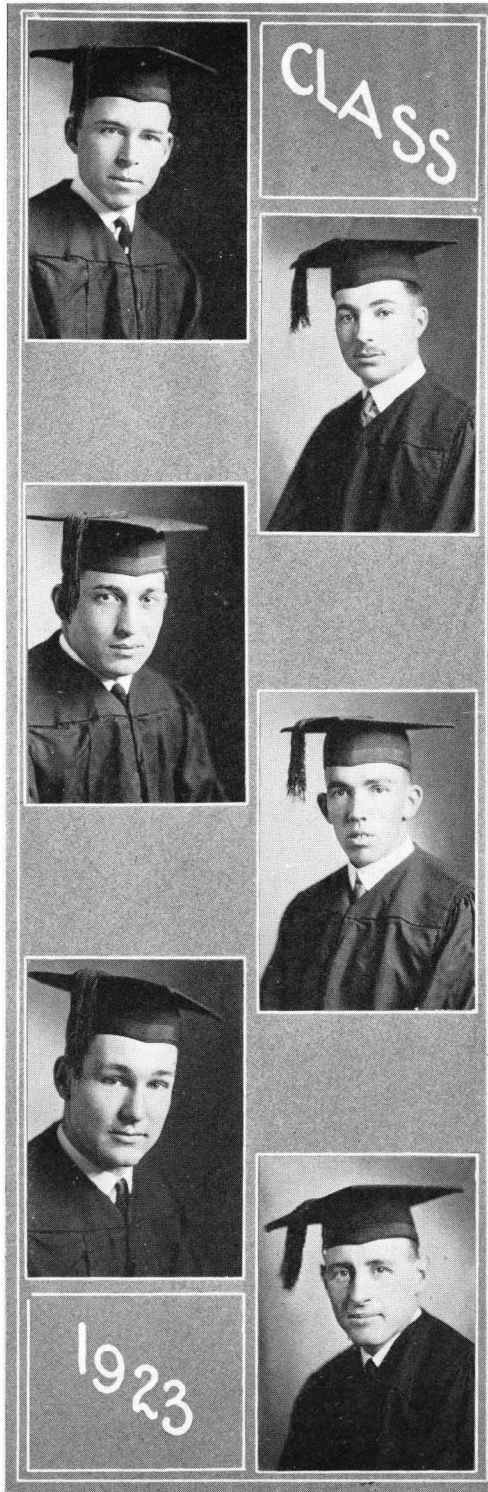
L. MERLE KIRKPATRICK, *Tau Beta Pi*,  
Pharos, Pasadena, Calif.  
Alias "Kirk"; Born July 8, 1901; Chemistry; Prepared at Hoopston High School, Illinois; State Preparatory School, Boulder, Colo.; Entered Freshman year; Annual Staff Picture Editor (4); Class Secretary-Treasurer (1, 3); Chem Club (3); Class Day Committee (4); Joint Winner, Junior Travel Prize.

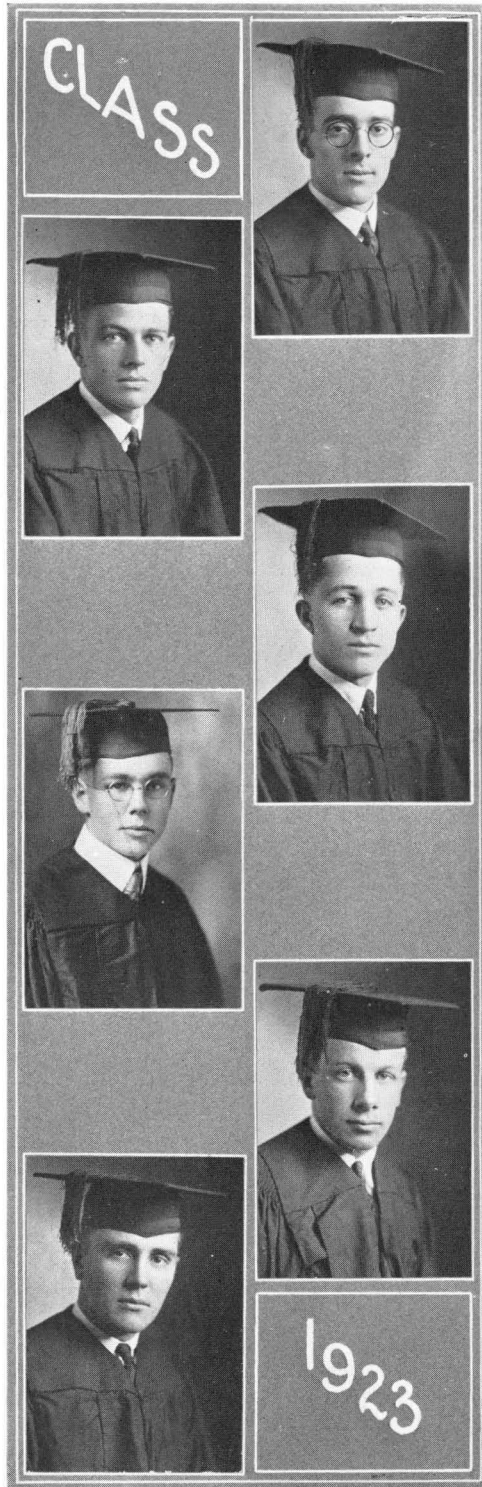
HUBERT A. REEVES, Los Angeles, Calif.  
Alias "Hubie"; Born July 19, 1899; Mechanical Engineering; Prepared at Poly High School; Entered 1918; President of Class (3); Board of Control (2); Varsity Club (1, 2, 3, 4); Dorm Club (1, 2, 3, 4); Y. M. C. A. (1, 2, 3, 4); A. S. M. E. (2, 3, 4); Captain R. O. T. C.; Letterman: Track (1, 2, 3, 4, 5). "R. O. T. C. artist."

DOUGLAS G. KENDALL,  
Los Angeles, Calif.  
Alias "Doug"; Born Jan. 21, 1898; Mechanical Engineering; Prepared at Manual Arts High School, Hollywood High School; Entered Freshman year; A. S. M. E. (3, 4); Y. M. C. A. (1, 2, 3, 4); Varsity Club (4); Second Lieutenant R. O. T. C. (4); Letterman: Tennis (4).

BASIL HOPPER, *Tau Beta Pi*, *Pharos*,  
Glendora, Calif.  
Alias "Lazy"; Born Oct. 6, 1901; Chemical Engineering; Prepared at Citrus Union High School; Junior College one year; Entered Sophomore year; Chem Club (3, 4); Band (2, 3); Sports; Football (3). "Mbezzle says he's sorry, but it's 'too much trouble'."

LAURENCE GARDINER SOUTH, *Press Club*,  
Pomona, Calif.  
Alias "Larry"; Born July 6, 1896; Mechanical Engineering; Prepared at Oregon Agricultural College; Oregon Agricultural College (1, 2); Entered Freshman year; Tech Staff (3); Annual Staff (3, 4); A. S. M. E. (3, 4); President (4); Y. M. C. A. (3, 4); Sports; Wrestling (4). "Aggressive? Yes, yes!"





CHARLES A. STORMS, *Pharos*,  
Pasadena, Calif.  
Alias "Chuck"; Born September 23,  
1899. Electrical Engineering; Pre-  
pared at Long Beach High School;  
Pomona College (1, 2); Entered  
Junior year; A. I. E. E. (2, 3, 4);  
Vice-President Junior Class, Secretary  
Senior Class; Y. M. C. A. (2, 3, 4);  
Sports; Track (3). "Electrical  
Storms—the high voltage engineer of  
the current year."



STANLEY T. SCHOFIELD, *Pharos*,  
Gardena, Calif.  
Alias "Scuff"; Born Aug. 24, 1900;  
Mechanical Engineering; Prepared at  
Gardena High School; Entered  
Freshman year; A. S. M. E. (2, 3,  
4); Secretary (3); Vice-President  
(4); Band (3). "Knows enough  
about a telephone exchange to be a  
chief operator."



GEORGE I. HICKEY, *Gnome Club, Press  
Club*, Los Angeles, Calif.  
Alias "G. I."; Born May 7, 1900;  
Electrical Engineering; Prepared at  
Polytechnic High School, Los An-  
geles; University of Southern Califor-  
nia six months; Entered Freshman  
year; Tech Staff (2, 3, 4); Business  
Manager (4); Annual Staff (4); Y.  
M. C. A. (1, 2, 4). "Efficiently sil-  
ent."



H. B. LEWIS, Balboa, Calif.  
Alias "H. B."; Born April 18, 1900;  
Mechanical Engineering; Prepared at  
Riverside and San Fernando High  
Schools; Entered Freshman year;  
A. S. M. E. (3, 4); Dorm Club (4).



JOHN R. NORTH, Colton, Calif.  
Alias "Jack"; Born Feb. 20, 1900;  
Electrical Engineering; Prepared at  
Riverside High School; Entered  
Freshman year; A. I. E. E. (3, 4, 5);  
Assistant in Electrical Engineering  
(5). "John,—the jovial juice junk  
juggler."



CHARLES S. HOWARD, *Sigma Alpha Pi*,  
Hemet, Calif.  
Alias "Wofang"; Born January 26,  
1901; Civil Engineering; Prepared at  
Hemet Union High School; Entered  
Freshman year; Athletic Manager  
(4); A. S. C. E. (3, 4); Varsity Club  
(2, 3, 4); Letterman: Football (4),  
Swimming (2); Sports: Baseball (2).

CLASS OF 1923

GEORGE C. KUFFEL, *Pharos*,

Holtville, Calif.  
 Alias "Kuf"; Born March 4, 1902;  
 Chemical Engineering; Prepared at  
 Holtville Union High School; Entered  
 Freshman year; Chem Club (2,  
 3, 4); Y. M. C. A. (1, 2, 3, 4). "Do  
 you really fall for the girls?"

✻ ✻

DONALD H. LOUGHRIDGE, *Tau Beta Pi*,

*Pharos*, Los Angeles, Calif.  
 Alias "Don"; Born Sept. 4, 1899;  
 Chemistry and Physics; Prepared at  
 Los Angeles High School; Entered  
 Freshman year; Chem Club (1, 2, 3,  
 4); Winner Freshman Travel Prize;  
 Joint Winner Junior Travel Prize.  
 "We half expect that Don will take  
 Kirk's cue and put on English."

✻ ✻

ROBERT E. WOODS, Pasadena Calif.

Alias "Diddy"; Born January 22,  
 1902; Civil Engineering. Prepared at  
 Pasadena High School; Entered  
 Freshman year; Letterman: Track  
 (4); Sports: Football (3). "Ac-  
 credited, but underestimated."

✻ ✻

JOSEPH R. ALCOCK, Fillmore, Calif.

Alias "Joe"; Born Oct. 28, 1900;  
 Chemical Engineering; Prepared at  
 Fillmore High School; Entered Fresh-  
 man year; Varsity Club (2, 3, 4);  
 Chem Club (1, 3, 4); Letterman:  
 Baseball (2, 3, 4). "Just another  
 handball fiend."

✻ ✻

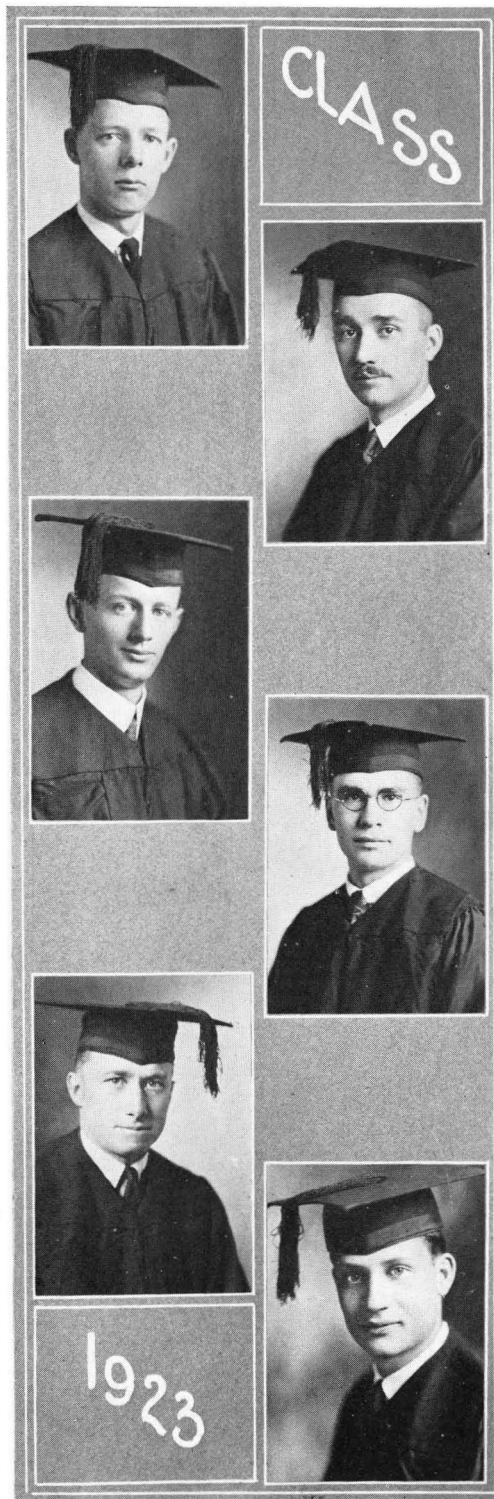
CHAS. P. WALKER, *Sigma Alpha Pi*,

Los Angeles, Calif.  
 Alias "Jack"; Born June 2, 1899; En-  
 gineering and Economics; Prepared  
 at Hollywood High School and Po-  
 mona High School; Entered Fresh-  
 man year; Board of Control (4); An-  
 nual Staff (4); A. I. E. E. (2, 3, 4);  
 Y. M. C. A. (1, 2, 3, 4); Judge of  
 Traditions Court (4); Honor Key  
 (4); Sports: Football Manager (4),  
 Track Manager (4), Swimming Man-  
 ager (4). "I really will begin study-  
 ing next week."

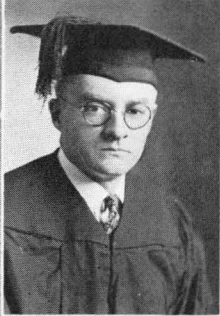
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GEORGE T. MCKEE, *Tau Beta Pi*, *Gnome*

*Club*, *Press Club*. Los Angeles, Calif.  
 Alias "Noisy"; Born December 21,  
 1901; Civil Engineering; Prepared at  
 Hollywood High School; Entered  
 Freshman year; Tech Staff (1, 2, 3);  
 Sporting Editor (2); Associate Editor  
 (3); Annual Staff (2, 3, 4); Institute  
 Editor (3); Editor-in-Chief (4);  
 Board of Control (2); A. S. C. E.  
 (2, 3, 4); Major R. O. T. C. (4);  
 Honor Key (4); Sports: Football  
 (3, 4). "Latent genius—always late."



CLASS



HUBERT KEATING WOODS, *Pharos*,  
Glendale, Calif.  
Alias "Hubie"; Born January 2,  
1900; Chemical Engineering; Pre-  
pared at Glendale High School; En-  
tered Freshman year; Radio Club  
(1, 2). "Non-orexigenic-odor-organi-  
zer-in-chief of the Chem Lab."

✻ ✻

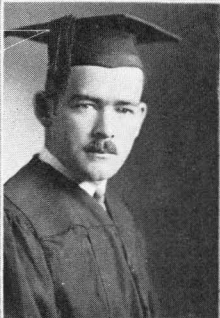
CHARLES FORDHAM STEARNS,  
Altadena, Calif.  
Alias "Chuck"; Born April 3, 1896;  
Engineering and Economics; Pre-  
pared at Pasadena High School; En-  
tered Freshman year; A. S. M. E.  
(3); A. I. E. E. (4); Y. M. C. A.  
(2, 3, 4). "Per aspera ad astra."

✻ ✻



J. HAROLD PULS, Yucaipa, Calif.  
Alias "Pulley"; Born Feb. 7, 1899;  
Mechanical Engineering; Prepared at  
Redlands High School; University of  
Redlands, one year; Entered Sopho-  
more year; A. S. M. E. (3, 4); Sec-  
retary-Treasurer (4); Band (2, 3,  
4). "Pulley made the wheels go  
round in the band."

✻ ✻



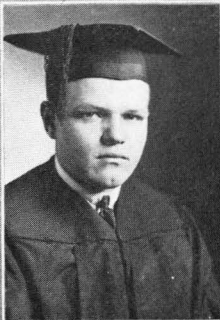
BERNARD G. EVANS, *Sigma Alpha Pi*,  
Santa Monica, Calif.  
Alias "Goofy"; Born June 3, 1899;  
Chemical Engineering; Prepared at  
Santa Monica High School; Entered  
Freshman year; Board of Control (3,  
4); Chairman (3); A. S. B. Vice-  
President (3); President (4); Class  
President (2); Annual Staff (2);  
Varsity Club (2, 3, 4); Secretary-  
Treasurer (3); Chem Club (1, 2, 3);  
Class Day Committee (4); Honor  
Key (2, 4); Letterman; Football (2,  
3, 4), Captain (4); Swimming (3,  
4); Sports; Track (2, 3, 4). "Deep  
secret—Bernie was in the Marine  
Corps."

✻ ✻



ROBERT J. HAMMOND, Anaheim, Calif.  
Alias "Bob"; Born May 14, 1898;  
Electrical Engineering; Prepared at  
Anaheim High School; Entered  
Freshman year; A. I. E. E. (3, 4).

✻ ✻



JOHN PAUL WALTER, Pasadena, Calif.  
Alias "J. P."; Born October 6, 1899;  
Electrical Engineering; Prepared at  
Pasadena High School and Riverside  
High School; Entered Freshman  
year; Band (1, 2, 3, 4); A. I. E. E.  
(4); Orchestra (2). "J. P.—but not  
Morgan—yet."

1923



CLASS OF 1923

MAX B. ALCORN, *Press Club*,

Pasadena, Calif.

Alias "The Puritan"; Born Oct. 23, 1900; Mechanical Engineering; Prepared at Pasadena High School; Entered Freshman year; Board of Control (3, 4); Annual Staff (2, 3, 4); Organizations Editor (3); Associate Editor (4); Tech Staff (1, 2, 3, 4); Exchange Editor (1); News Editor (2); Managing Editor (3); Editor-in-Chief (4); A. S. M. E. (3, 4); Aero Club (3, 4); Secretary (3, 4); Y. M. C. A. (2, 3, 4); Rifle Team (4); Captain R. O. T. C. (4); Honor Key (3, 4).

✻ ✻

LEWIS M. MOTT-SMITH,

Los Angeles, Calif.

Born July 10, 1902; Physics; Prepared at Hollywood High School, Friends School, Washington, D. C.; Entered Freshman year; Physics Assistant (4). "Plumb full of unplumbed possibilities."

✻ ✻

H. TODD NIES, *Tau Beta Pi*,

Pasadena, Calif.

Alias "Honey"; Born Mar. 30, 1902; Chemical Engineering; Prepared at Pasadena High School, McKinley High School, St. Louis Mo.; Entered Freshman year; Chem Club (2, 3, 4); President (4); Varsity Club (4); Y. M. C. A. (1, 3, 4); Letterman; Tennis (4). "El Toddo, the temperamental tennis travado."

✻ ✻

RICHARD U. SEARES, *Gnome Club*,

Pasadena, Calif.

Alias "Squid"; Born Sept. 29, 1900; General; Prepared at Pasadena High School; Entered Freshman year; Yell Leader (4); "The Atomizer" (5); Annual Staff (4); Letterman; Swimming (2, 4); Track (5); Sports; Football (3, 4). "Champion second team man of the universe."

✻ ✻

LAMBERTO E. DE LA ROCHA,

Durango, Mexico

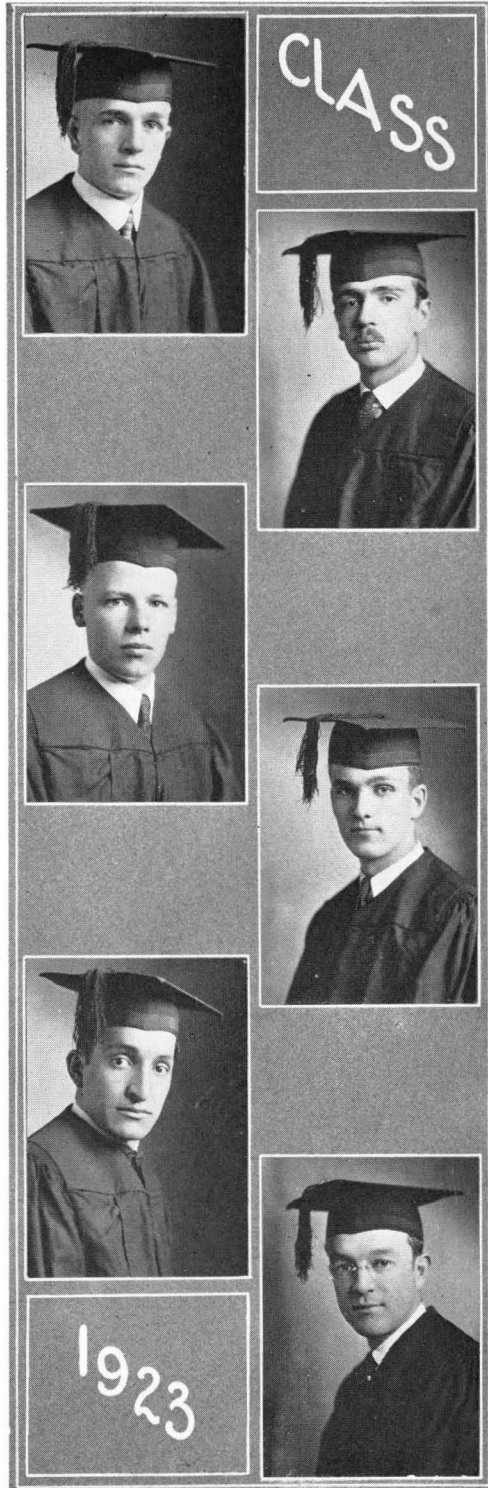
Alias "Dell"; Born Dec. 25, 1899; Civil Engineering; Prepared at Harvard Military School; Entered Freshman year; A. S. C. E. (2, 3, 4); Band (3). "Dell should have been a lawyer, his arguments are so convincing."

✻ ✻

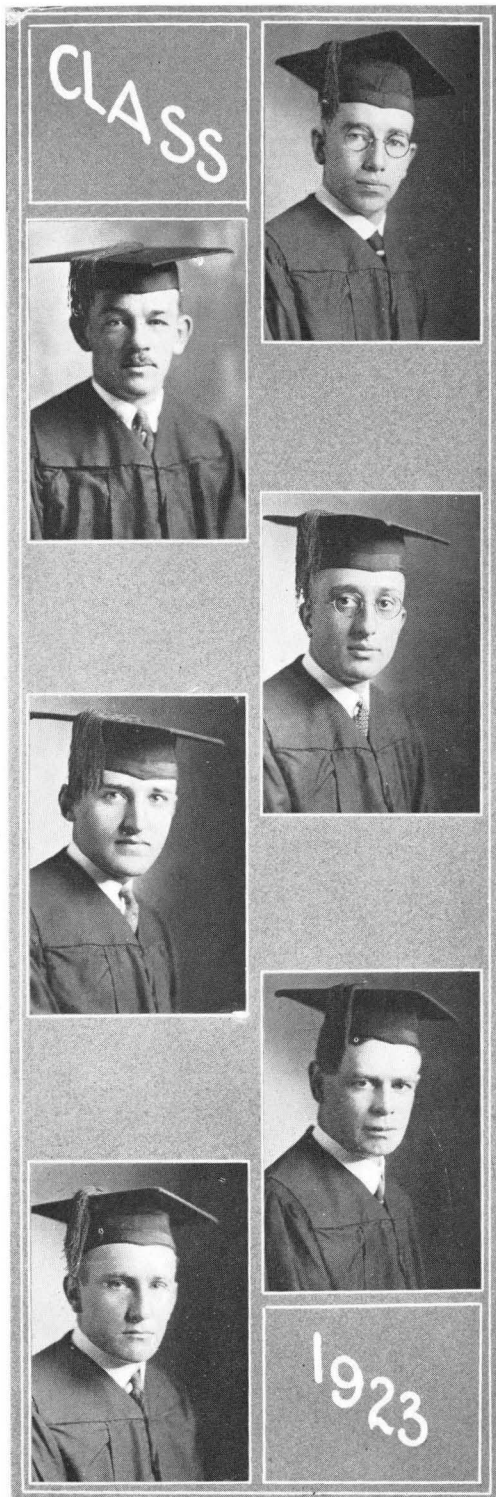
ALVA C. HALL, *Pharos, Press Club*,

Gardena, Calif.

Alias "Alvie"; Born Nov. 11, 1901; Mechanical Engineering; Prepared at Gardena High School; Entered Freshman year; Tech Staff (3, 4); Annual Staff Athletic Editor (4); A. S. M. E. (2, 3, 4); Y. M. C. A. (1, 2, 3, 4); Band (1, 2, 3, 4).



BIG T 1923



HAROLD S. ENDICOTT, *Tau Beta Pi*,  
 Pomona, Calif.  
 Alias "Roper"; Born Dec. 10, 1901;  
 Electrical Engineering; Prepared at  
 Claremont High School; Entered  
 Freshman year; A. I. E. E. (2, 3, 4);  
 Y. M. C. A. (1, 4); Dorm Club (1,  
 2, 3, 4); House Committee (4).  
 "Endie is going to the G. E.—and  
 with a wife." ❄ ❄

RICHMOND H. SKINNER, *Sigma Alpha Pi*,  
 Boston, Mass.  
 Alias "Dick"; Born Aug. 10, 1898;  
 Civil Engineering; Prepared at Dor-  
 chester High School, Boston, Mass;  
 Mass. Inst. of Tech. (1, 2); Entered  
 Junior year; Annual Staff (4); A. S.  
 C. E. (3, 4); Varsity Club (4); As-  
 sistant Physical Director (4); Chair-  
 man Class Day Committee (4); Let-  
 terman: Tennis (4), Manager (4);  
 Swimming (4), Manager, Coach (3,  
 4); Baseball (4); Sports: Track  
 (4), Manager (3); Football (4).  
 "Manager of tennis, track and tank."  
 ❄ ❄

ROBERT J. SCHONBORN, *Tau Beta Pi*,  
 Pasadena, Calif.  
 Alias "Count"; Born Aug. 25, 1896;  
 General; Prepared at Polytechnic  
 High School, Los Angeles; Entered  
 Freshman year; A. S. C. E. (2, 3);  
 A. I. E. E. (4). "When the Count  
 works juice problems, Magnusson  
 takes a back seat."  
 ❄ ❄

DOUGLAS A. STROMSOE, *Sigma Alpha Pi*,  
*Press Club*, Long Beach, Calif.  
 Alias "Doug"; Born September 5,  
 1898; Civil Engineering; Prepared at  
 Long Beach High School and Manual  
 Arts High School; Entered Freshman  
 year; Editor of the "Tech" (2); As-  
 sociate Editor (3); Chem Club (1);  
 Board of Control (2, 3); Rifle Team  
 (2, 3); A. S. C. E. (3, 4); President  
 (4); Varsity Club (3, 4); Let-  
 terman: Football (3, 4); Sports: Foot-  
 ball (1, 2), Track (2, 3, 4).  
 ❄ ❄

CHARLES E. FITCH, *Tau Beta Pi*,  
 Los Angeles, Calif.  
 Alias "Ed"; Born Sept. 24, 1893;  
 Electrical Engineering; Prepared at  
 Polytechnic High School, Los An-  
 geles; Entered Freshman year; A. I.  
 E. E. (4); Assistant in Electrical En-  
 gineering (4). "Potential Westing-  
 house potentate."  
 ❄ ❄

FRED G. LITTLE, Los Angeles, Calif.  
 Alias "Sloppy"; Born Aug. 27, 1898;  
 Electrical Engineering; Prepared at  
 Montebello High School; Entered  
 Freshman year; A. I. E. E. (4).  
 "Noon-hour casaba twirler."

## CLASS OF 1923

HAROLD R. PRESTON, *Sigma Alpha Pi*,

Huntington Beach, Calif.  
 Alias "Steinmetz"; Born July 7, 1898;  
 Electrical Engineering; Prepared at  
 Huntington Beach High School; Entered  
 Freshman year; A. I. E. E. (4);  
 Chairman (4); Varsity Club (2, 3,  
 4); President (4); Dorm Club (1,  
 2); Chairman Honor Points Commit-  
 tee (4); Letterman: Baseball (1, 2,  
 3, 4), Captain (4); Sports: Foot-  
 ball (3); Track (4). "Short but  
 potent."

✻ ✻

ELMER L. SMITH, Pasadena, Calif.

Born July 8, 1897; Civil Engineering;  
 Prepared at Pasadena High School;  
 Entered Freshman year; A. S. C. E.  
 (3, 4). "Smithy should have been a  
 biologist."

✻ ✻

WILLARD E. BAIER, Pasadena, Calif.

Alias "Wooly"; Born July 30, 1902;  
 Chemical Engineering; Prepared at  
 Hollywood High School, Polytechnic  
 High School, San Francisco, Calif.,  
 Coalinga High School; Entered  
 Freshman year; Chem Club (1, 2, 3,  
 4); Varsity Club (4); Letterman:  
 Track (4). "A weight heavier with  
 a future."

✻ ✻

HAROLD A. BARNETT, Corona, Calif.

Alias "Chemist"; Born July 7, 1898;  
 Civil Engineering; Prepared at Cor-  
 ona High School, Booneville High  
 School (Miss.); Entered Freshman  
 year; Chem Club (1, 2); Vice Presi-  
 dent (1), President (2); A. S. C. E.  
 (3, 4). "Harold, it seems, is a civ-  
 ilized Civil Engineer."

✻ ✻

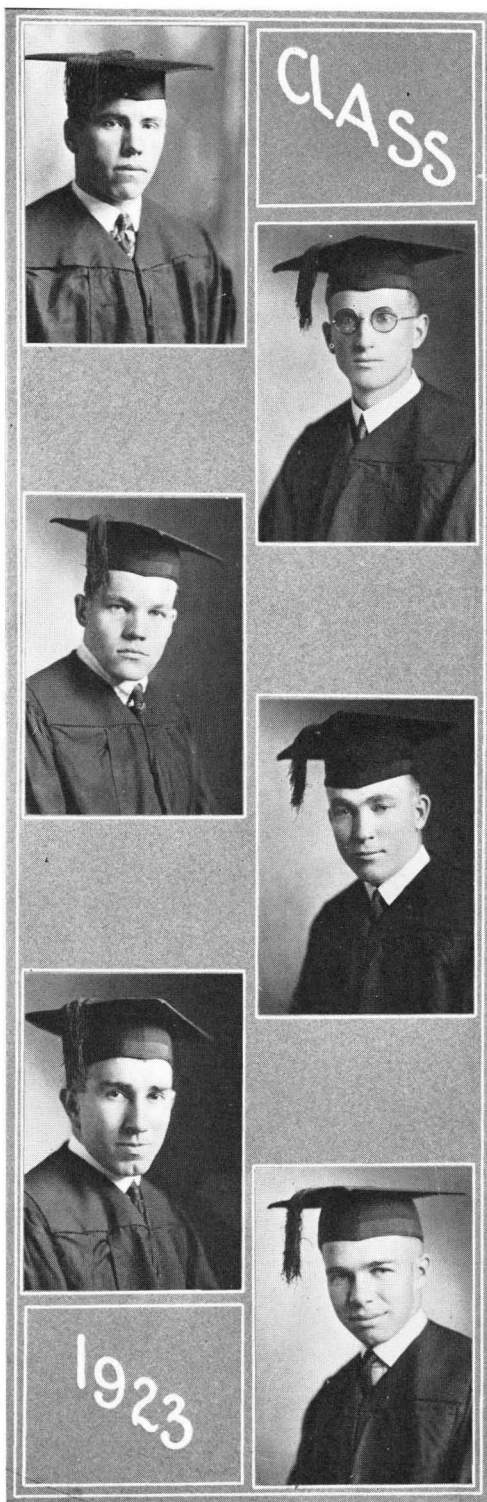
CHARLES D. ADAMS, Pomona, Calif.

Alias "Rookie"; Born Oct. 18, 1900;  
 Mechanical Engineering; Pomona  
 College, one year; Prepared at Po-  
 mona High School; Entered Fresh-  
 man year; A. S. M. E. (3, 4); Sports:  
 Football (3, 4). "Rookie's leg was  
 tested to destruction. Ultimate load,  
 ten football men."

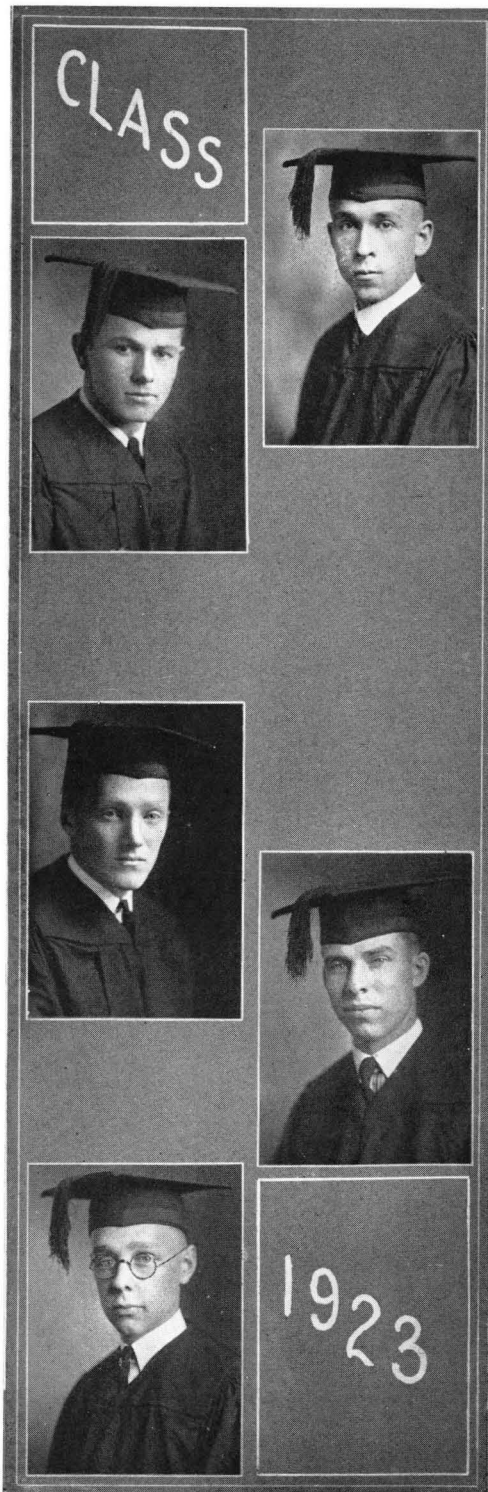
✻ ✻

GEORGE N. RAMSEYER, *Tau Beta Pi*,  
*Pharos*.

Alias "Rams"; Born Jan. 21, 1902;  
 Civil Engineering; Prepared at Gar-  
 dena High School; Entered Freshman  
 year; Vice-President of Senior Class  
 (4); A. S. C. E. (2, 3, 4); Treasurer  
 (4); Freshman Baseball Coach (4);  
 Band (1, 2, 3, 4); Orchestra (1);  
 Sports: Baseball (1). "A specialist  
 in baseball and—er—women—so we  
 are told."



BIG T 1923



HOWARD WINEGARDEN, *Tau Beta Pi*,  
Pasadena, Calif.  
Alias "Grapes"; Born September 1,  
1898; Chemical Engineering; Pre-  
pared at Pasadena High School; En-  
tered Freshman year; Chem Club (2,  
3, 4); Winner Freshman Travel Prize  
1918. "Discovered that a toluene  
explosion a day will keep monotony  
at bay."

✻ ✻

DAVID G. HARRIES, *Tau Beta Pi, Sigma  
Alpha Pi*, San Bernardino, Calif.  
Alias "Dave"; Born Jan. 27, 1901;  
Electrical Engineering; Prepared at  
San Bernardino High School; En-  
tered Freshman year; Board of Con-  
trol (3); Class President (4); A. I.  
E. E. (4); Varsity Club (2, 3, 4);  
Y. M. C. A. (1, 2, 4); Dorm Club (1,  
2, 3, 4); House Committee (3);  
President (4); Letterman: Swimming  
(2, 3, 4), Captain (4). "The big-  
gest surprise in Dave's life would be  
to hold a class meeting with over  
half the class there."

✻ ✻

WALTON GILBERT, *Tau Beta Pi, Gnome  
Club*, Victoria, B. C., Canada.  
Alias "Pinkie"; Born September 23,  
1897; Prepared Victoria High School  
and Pasadena High School; Entered  
Freshman year; Student Body Treas-  
urer (4); A. S. M. E. (3, 4); Aero  
Club (3, 4); President (4); Annual  
Staff (3, 4); Y. M. C. A. (1, 2,  
3, 4); Sports: "Scrubs" (3).  
"Zounds! It doth amaze me!"

✻ ✻

W. LARRIBEE BANGHAM,  
Pasadena, Calif.  
Alias "Larry"; Born May 19, 1901;  
Civil Engineering; Prepared at  
Hemet High School; Entered Fresh-  
man year; Board of Control (4);  
Annual Staff (4); A. S. C. E. (3, 4);  
Glee Club (2, 3, 4); President (4);  
Y. M. C. A. (1, 2, 3, 4); President  
(4); Mandolin Club (2, 3); "The  
Atomizer" (4); Sports: Baseball (3,  
4). "Chimes for Larry."

✻ ✻

HOWARD C. TRACY, Hollywood, Calif.  
Alias "Swimmer"; Born March 15,  
1902; Chemistry; Prepared at Holly-  
wood High School; Entered Freshman  
year; Chem Club (1, 2, 3, 4); Vice-  
President (4). "I'd rather swim than  
go canoeing anyway."

✻ ✻

FRANK ROBERTS, Pasadena, Calif.  
Born December 11, 1897; Electrical  
Engineering; Prepared at Pasadena  
High School, and Steuben High  
School, Ohio; Entered Freshman  
year, 1917; B. S. 1923.

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CLASS OF 1923

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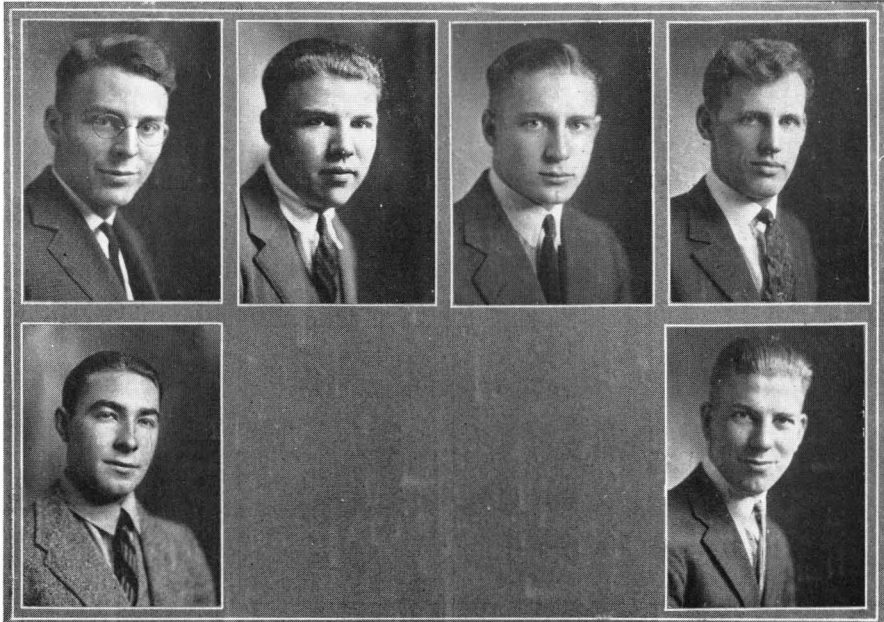
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CLASS OF 1924

OFFICERS

<i>President</i>	-	-	-	-	DONALD F. MORRELL
<i>Vice-President</i>	-	-	-	-	MARTIN L. BEESON
<i>Secretary</i>	-	-	-	-	EDGAR N. LAYTON
<i>Treasurer</i>	-	-	-	-	EDGAR M. DEREYMER
<i>Athletic Manager</i>	-	-	-	-	OLIVER W. KILHAM

BOARD OF CONTROL

FRED J. GROAT (S. B. Vice-Pres.)	F. DOUGLAS TELLWRIGHT
MORRIS GOLDSMITH	E. HAROLD GANDY

DANCE COMMITTEE

ROBERT E. PEFFER, ( <i>Chairman</i> )	EDWARD CORNELISON
ORVAL E. LIDDELL	

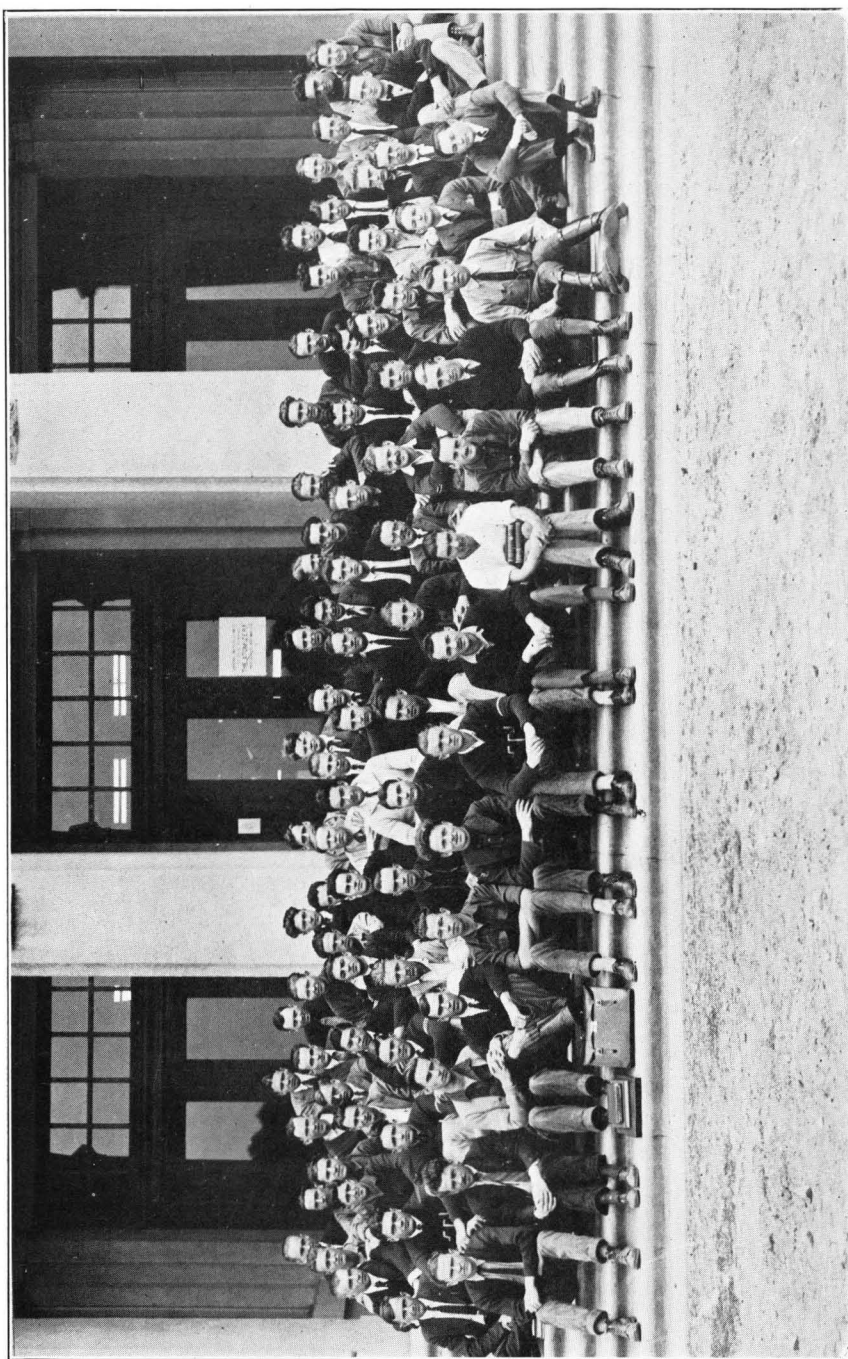
JUNIOR TRAVEL PRIZE

HOWARD W. GOODHUE

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CLASS OF 1924

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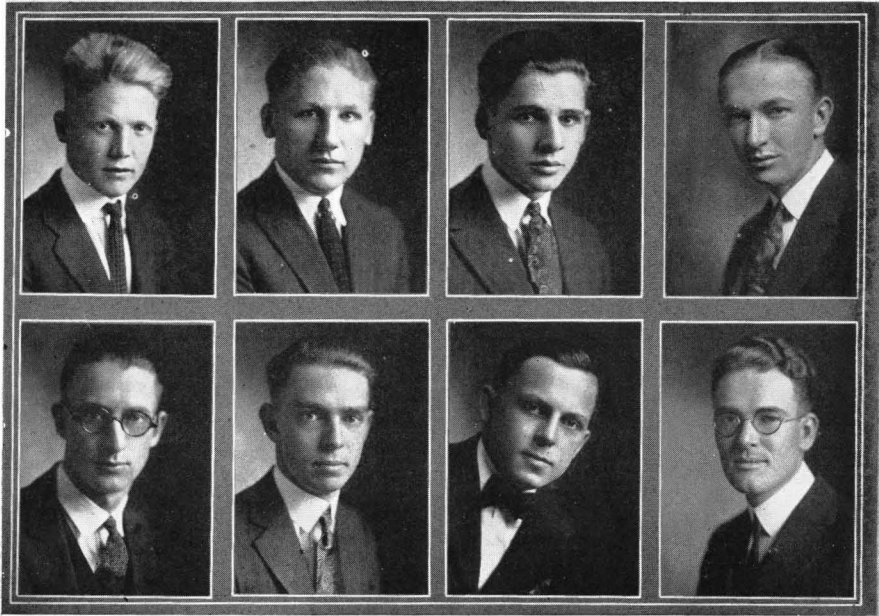
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PETERSON  
McFARLIN

KINSEY  
SALSBURY

HOFFMAN  
TACKABURY

FERKEL  
NEWTON

CLASS OF 1925

OFFICERS

*President* - - - - H. FRED PETERSON  
*Vice-President* - - - - J. E. KINSEY  
*Secretary* - - - - M. I. HOFFMAN, JR.  
*Athletic Manager* - - - - A. J. FERKEL

BOARD OF CONTROL

M. E. Salsbury

Gerald H. McFarlin

COMMITTEES

DANCE

Howard S. Tackabury (*Chairman*)  
Michael C. Brunner                      Donald F. McGaffey

EMANCIPATION

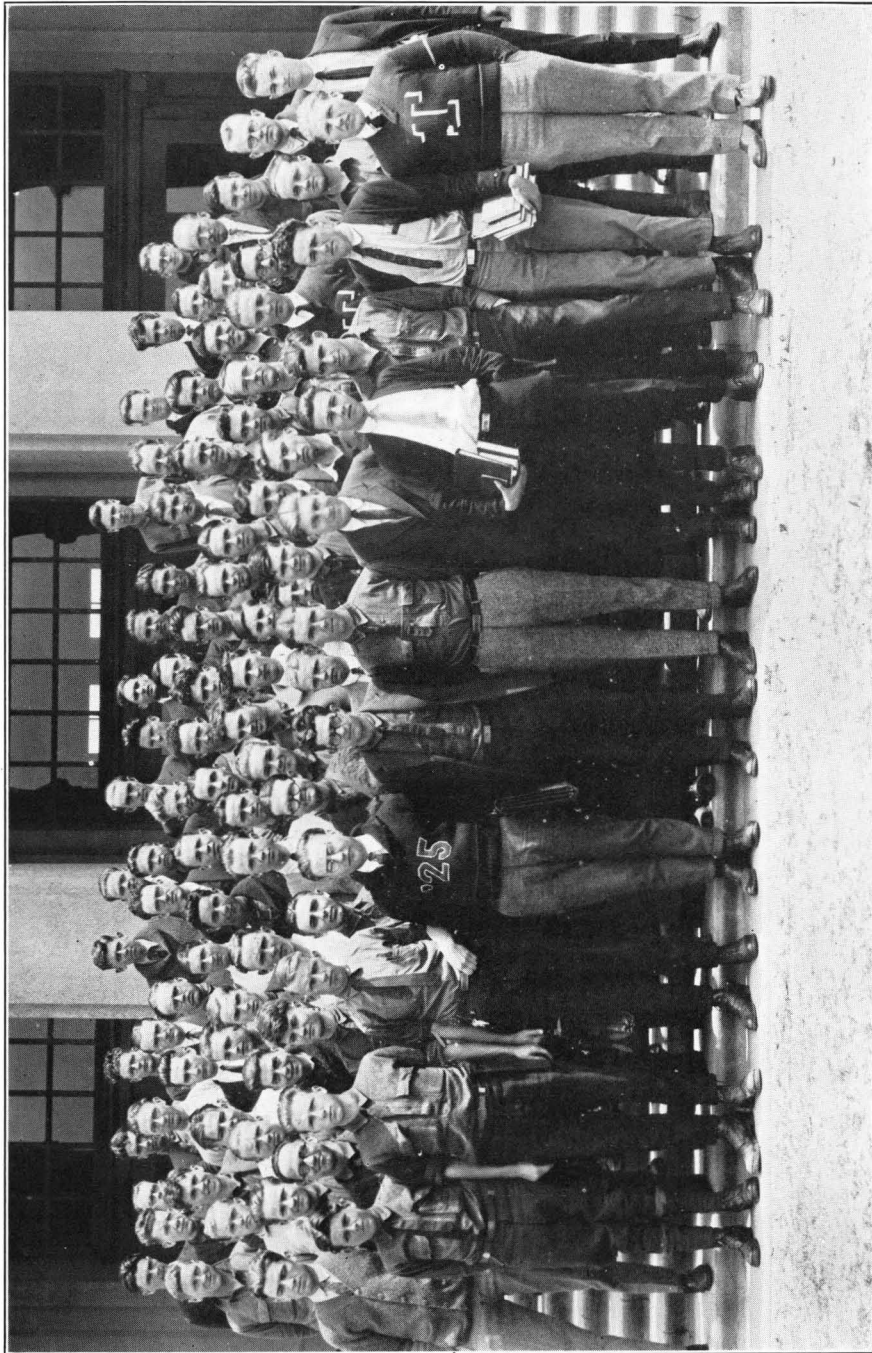
Alfred A. Newton (*Chairman*)



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CLASS OF 1925

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BIG T 1923

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DIXON

PENFIELD

CAMPELL

HEILBURN

FROSH CLASS

OFFICERS

*President* - - - - - LE ROY DIXON  
*Vice-President* - - - WALLACE C. PENFIELD  
*Secretary-Treasurer* - - - STUART CAMPBELL  
*Board of Control* - - - ROBERT HEILBORN

ATHLETIC COMMITTEE

W. Stuart Johnson                      George R. Kaye  
Thomas W. Temple

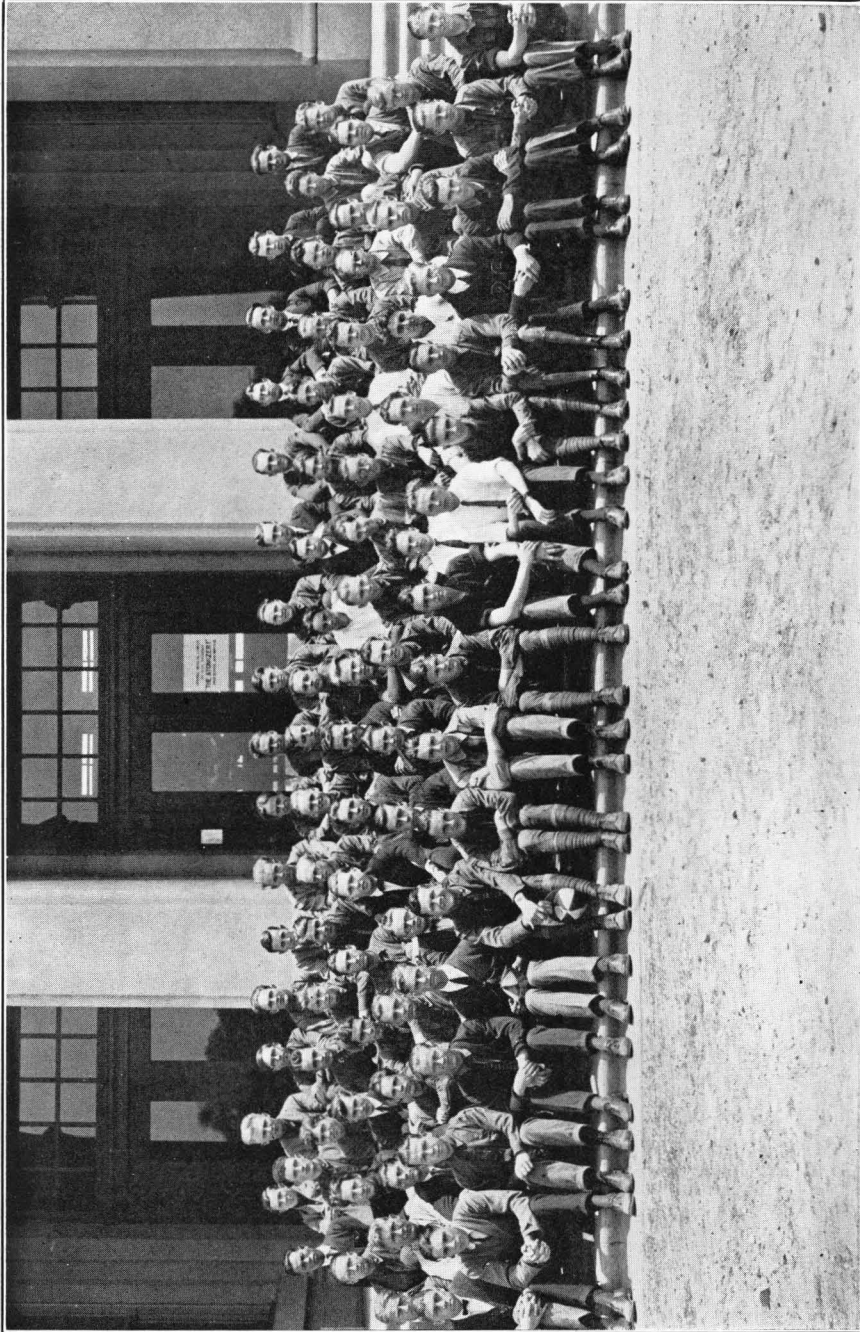
DANCE COMMITTEE

Joseph Matson, Jr.                      Philip Lew Fay  
Theodore C. Coleman

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CLASS OF 1926

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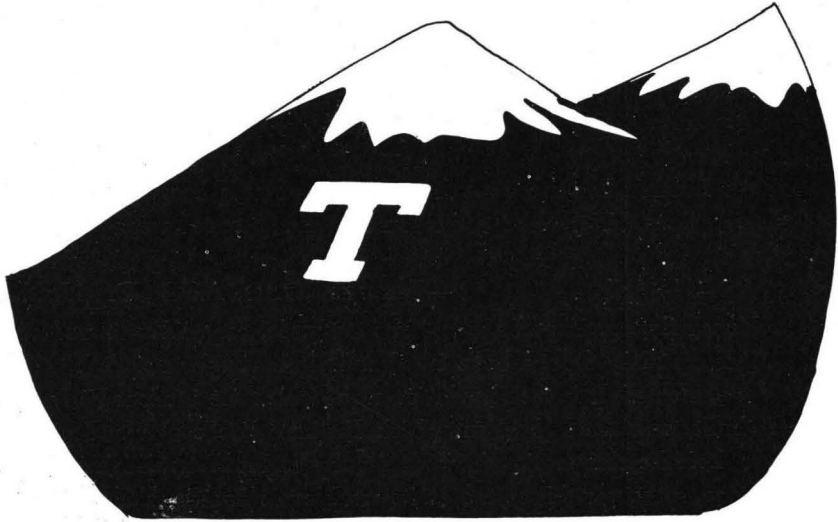
*HAIL C. I. T.*

*In Southern California  
With grace and splendor bound,  
Where the lofty mountain peaks  
Look down to lands beyond.*

*Proudly stands our Alma Mater,  
Glorious to see;  
We raise our voices hailing,  
Hailing, hailing thee.*

*Echoes ringing while we're singing,  
Over land and sea;  
The halls of fame resound thy name,  
Noble C. I. T.*

—MANTON M. BARNES, C. I. T. '21.



**TRADITIONS**

### THE HONOR SYSTEM

OF all the traditions of the Institute the Honor System is the most sacred and the most valued. To fully appreciate its benefits a man must have had the privilege of serving under it. The System is dear to the hearts of all loyal 'Tech' men, and is cherished and jealously guarded by those men. Its continued success is wholly dependent upon the interpretation put upon the system by the students of the Institute.

"The control which a man finds necessary to exercise under the Honor System develops to a great extent one of the most sterling qualities of true manhood, that of self-reliance. Not restricted in its operation merely to examinations and tests, but pervading the very life of the student both during his college days and in after life, its value to him in strengthening character and in developing that ability to distinguish between right and wrong is inestimable."

—BERNARD EVANS, A.S.B., President.

The Honor System is perhaps rather intangible, especially to underclassmen, but it is certainly the most cherished and vitally important Tech tradition to the older students. It is the foundation upon which the Student Body organization is built, and the hub about which Institute life centers. It involves much more than the cooperation between faculty and student which is its most salient feature, although this phase of its working is known wherever Tech is known and has done much to give the Institute the recognition which it has gained.

This System is our traditionally accepted means of control and government, which applies the principles of honesty, self-control and conduct befitting a gentleman and engineer to all student relations. It enables the professor to be absent from the classroom during an examination. By its means a student's word under any circumstances is as good as his bond. It leads to a feeling of mutual respect and understanding between Institute administration and Student Body which may be gained in no other way, and makes for that unity among the students themselves which is so essential to good fellowship and to the development of self-reliant and honorable men.

Executive power under this System is vested in a Student Board of Control composed of representatives elected by each class and headed by the Vice-President of the Student Body, who acts as chairman. So great is the pride in the integrity of the System that infringements are exceedingly rare, but improprieties observed by or reported to the Board are discussed and judgment passed upon the offender. If a student observes another abusing the liberties allowed under this System, he calls the attention of the offender to the fact, which is usually sufficient for a realization of the error. In case the offense is not rectified, the matter is reported to the Board of Control, and dealt with according to its gravity.

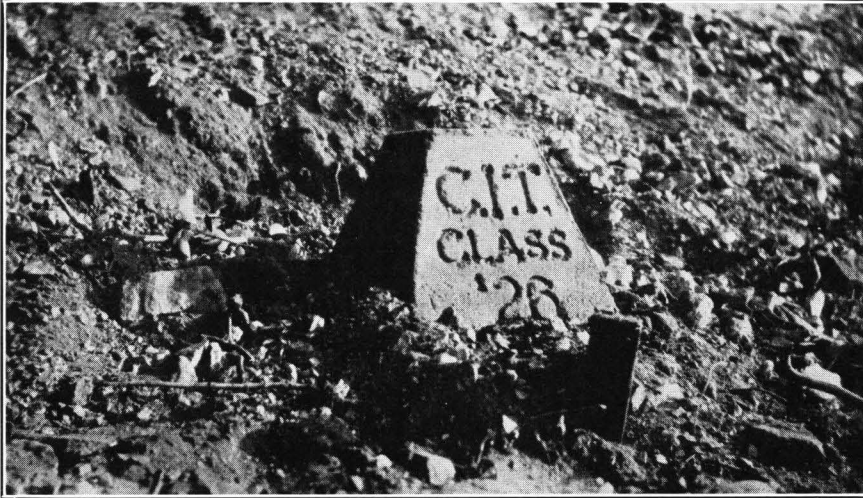
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## TRADITIONS

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### THE BIG "T" PARTY

THE class of twenty-six gathered at the Mt. Wilson toll-house just as the sun rose on the morning of October the twenty-eighth, and led by an automobile carrying tools and a class monument, scaled the steep sides of the mountain, via the toll road, the more ambitious hikers taking short cuts up the steep ridges which led to the big "T".

The leaders of the party reached the "T" at seven-thirty, and by eight o'clock nearly two hundred men were busy with shovel and hoe, clearing the emblem of weeds and growth. The workers started at the top of the big emblem and worked down the stem to the foot.

The enormous size and the steepness of the clearing caused much surprise among the freshmen, but as there was no shortage of labor, the task was completed by nine o'clock. A great many had provided themselves with lunch, anticipating a longer job. However lunches were soon put permanently away. Many of the party brought their cameras into full use, while others delighted in rolling boulders down the steep clearing. About nine o'clock, after roll had been called, the party separated and made their respective ways back to Pasadena.

Among those who had not anticipated the fast work of the freshmen class was Secretary Mussleman of the Y. M. C. A. Driving a car loaded with doughnuts and apples, he met the party on their return trip, but they were glad to relieve him of a part of his load. In fact they lived up to their reputation of "doing things up in a hurry."

The majority of the party had reached Pasadena by noon and the "T" stood out as a clearer, and cleaner emblem for Tech.

## Pole Rush

THE pole-rush is the one event of the year in which the Freshmen may take revenge on their oppressors, the Sophomores. In fact the pole-rush may be called the first "get acquainted party." The contest between the classes of twenty-five and twenty-six was held on the Tournament Park turf on last October the tenth. The affair was given wide publicity and when the eventful afternoon arrived, students, professors, and townspeople thronged into the park.

In order to prevent mistaken identity, the younger classmen smeared their faces with grease-paint, and they were a sight to behold, with pants tied securely on, and determined looks on their faces; although if secrets were known, a good many were suffering from feelings of emptiness in their lower regions.

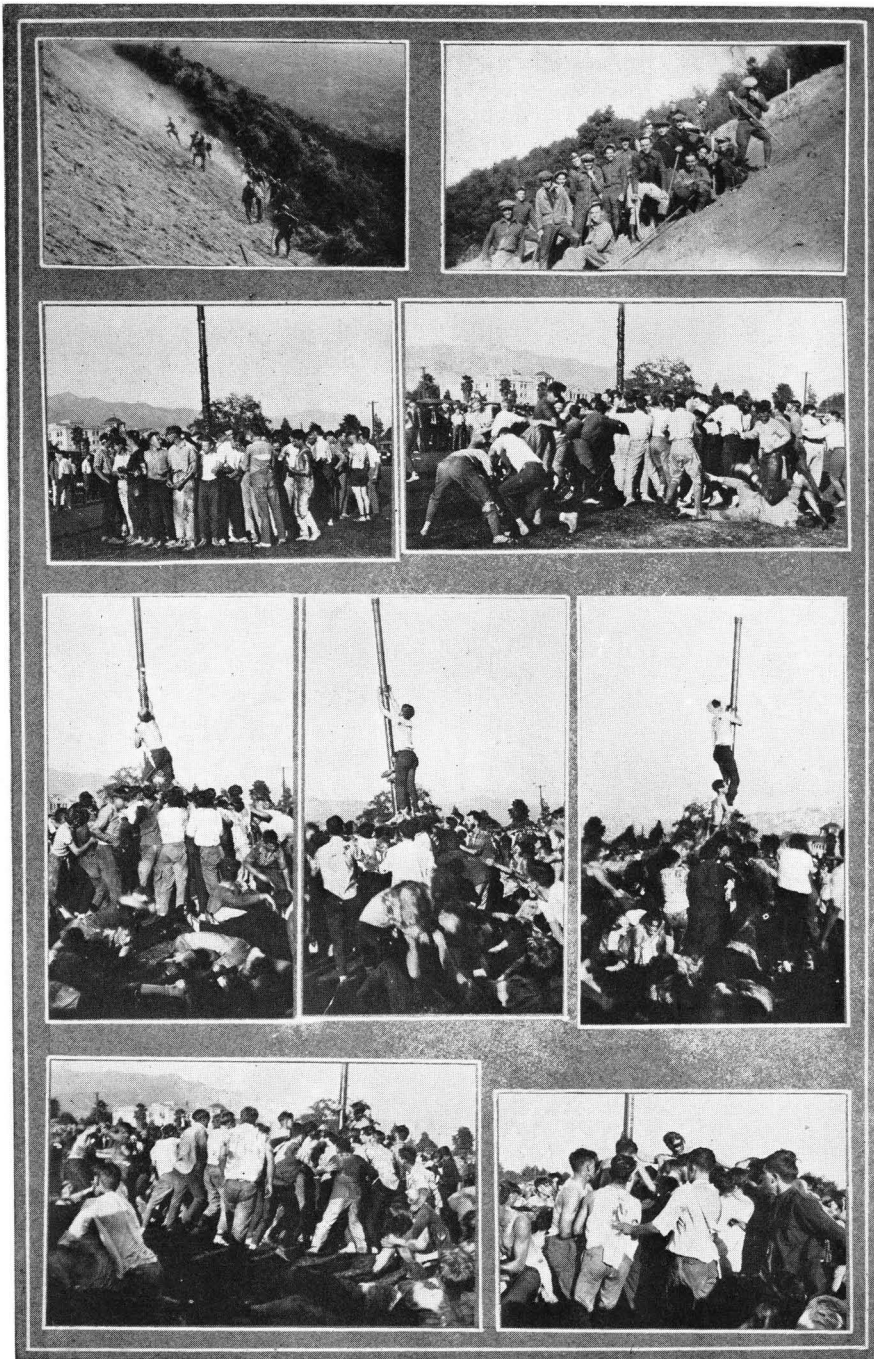
The sophomores, one hundred strong, and clad in their overalls which showed signs of previous pole-rush experience, locked arms around the grease be-smearred pole, and the picture they presented was fierce to behold. At the signal from referee Hans Kramer one hundred and twenty-five freshmen advanced from the four sides of the pole, and, amid the roar of combat and the cheers from the spectators, the underclassmen fought their battle. When a majority of the sophomores had been thrown from their feet, a reserve team of freshmen entered the fray and attempted to climb the pole. However, enough sophomores were free to prevent the capture of the flag, and many ambitious freshmen descended to the ground with a mouth full of grease, and no shirt.

When the final whistle blew, the canvas remained for the second time in history in the hands of the class of twenty-five. The freshmen received many compliments in recognition of their game fight, and the sophomores removed themselves from the scene of battle, rather the worse for wear. In fact it was heard remarked that the time was quite appropriate for a "coming out party."

Due to the good management of the Junior Class in charge of the affair, there were no serious injuries, and the rush was conducted in a good sportsmanlike spirit by both classes. Later, on December the sixteenth, the Freshmen entertained the student body and faculty of the Institute at a very enjoyable informal dance, held in the Hotel Maryland, as is the custom of the losing class.



TRADITIONS





MRS. ROBT. A. MILLIKEN

Who has added a new and delightful note to the social life of the Institute with the teas at which she is hostess to all Tech men

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## TRADITIONS

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### Football Banquet

“LAFAYETTE, we were there!” May this be our battle cry at the nineteen hundred and twenty-three football banquet, in view of the fact that Lafayette College of Pennsylvania intends to come to Southern California next year to play the conference champions in an East vs. West game.

For the benefit of the un-initiated, the Football Banquet is the one social function of the year which every one hundred per cent Tech man always attends. The last Football Banquet held at the Coffee Cup Inn, on December the eleventh, nineteen twenty-two, saw a larger attendance, by far, than any previous banquet. Prof. Sorenson was master of ceremonies. The first speaker whom he introduced was Dr. Millikan, who gave a very interesting talk on the advantages of intercollegiate athletics to the Engineer. Capt. Kramer next gave a talk on the all important scrub team.

The much coveted block “T” sweaters were presented for “services rendered,” to the following men: Capt. Bernard Evans, Capt.-elect Moyse, Beck, Groat, Brunner, Stromsoe, Howard, Alderman, Goldsmith, Kinsey, Smith, Sellers, Foster, Cannon, and Seymour.

The committee in charge brought honor to themselves by the attractive and appropriate decorations which festooned the walls and adorned the tables.

#### THE MENU

<i>Turf</i>	<i>Whittier</i>	<i>Goal Posts</i>
<i>Oxy</i>	<i>Pills</i>	<i>Redlands</i>
<i>Gauze</i>	<i>Grunts</i>	<i>Salve</i>
<i>Mash 'em</i>		<i>Southern Branch</i>
	<i>Touchdown</i>	

THE EXHIBIT

The Annual Exhibit of Buildings and Equipment opened just after noon, Friday, March 20. The Seniors in charge of registration of the visitors and the Sophomore guides were already assisting the early comers, and soon people from all over Southern California began to spread out over our campus and through our buildings.

Everything was in readiness and the student exhibitors were prepared to show the expectant crowd of visitors things that would make them appreciate the scope of our educational domains. The spirit of the holiday and festival prevailed. Perhaps more girls than ever before were escorted through this exhibition of wonders of a nature yet unknown to them. High school instructors and students were everywhere, parents of Tech men were enjoying personally conducted tours and technical men and old grads were present, drawn by the atmosphere of science and engineering.

The exhibit continued through the afternoon and evening until eleven o'clock. During the afternoon Mr. Ernest C. Watson of the Physics Department gave a descriptive lecture on the facilities of the Norman Bridge Laboratory of Physics. At five o'clock the R. O. T. C. Engineer Battalion formally welcomed the visitors with the best parade of the year.

Mrs. Millikan was assisted in the afternoon by the wives of the faculty in serving tea to the guests in the Auditorium annex.

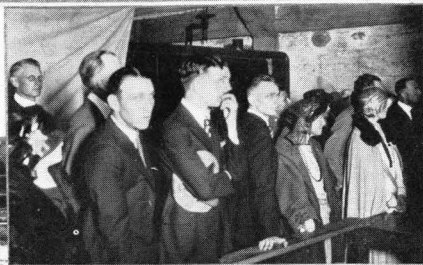
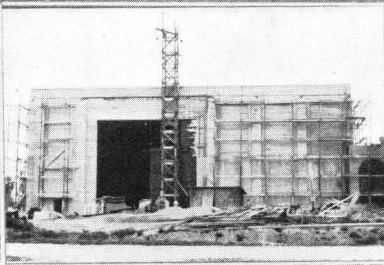
The Alumni dinner was a brilliant affair. The dormitory dining room was crowded to overflowing with students, faculty members, and alumni returning to visit their Alma Mater. The dinner was followed by a glee club concert and an address to the Alumni and their friends in the Auditorium annex by Professor C. K. Judy.

Hearing the strains of music and the babbling of voices, and viewing the dome of Throop Hall standing forth in the beam of the great searchlight while below it the vari-colored lights gleamed through the oranges trees, one could imagine himself in a garden of dreams. The architecture of the buildings was exquisitely set forth by concealed flood lights while colored lights dotted the darker corners. Still the crowd lingered, and it was not until an hour after the official closing time that the weary, yet happy students were able to turn out the lights and rest for the following day.

On through Saturday the exhibit continued until the start of the conference baseball game with Redlands University, which closed our most successful exhibit with a fitting climax, Victory.

The Exhibit opened the eyes of Southern California to the fact that here in the midst of a hurried life, there is nestled in the oaks and pleasant groves of Pasadena an institution which is doing things, big things, and doing them well. Likewise it showed to the student body that they could do things, and that they could be justly proud of their Alma Mater when they see her at her best.

TRADITIONS



The Kendalls



Chairman

EXHIBIT DAY



'Third'

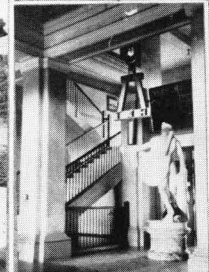


Katharine Lathrop  
The Second!

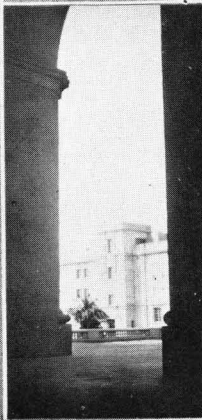
All the kids like the Tank



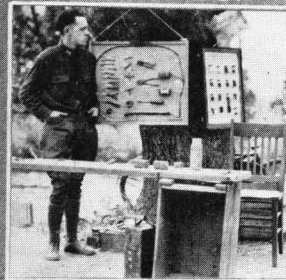
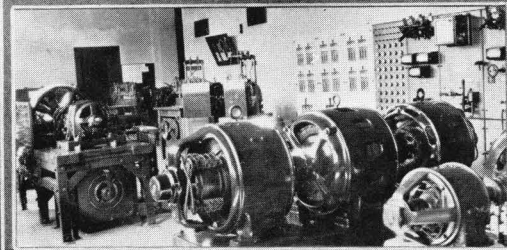
Kotinka



Brains



Juice Lab



Best Winter  
of your  
School  
( )

## The Red Hot Rivet

**A**FTER three successful years "The Hot Rivet" has come to be regarded as an institution of the college. Each year the "razz" edition is put out by the new members of the Press Club as their initiation, and each year the publication seems to get better.

Many colleges have instituted "razz" editions of their papers based on "The Hot Rivet," adopting from it anything from the color of the paper to the subject matter, and now, only in its third year, the publication is one of the most famous college editions in the West.

The initiates who this year wrote the "Rivet" were Lawrence South, Edgar Layton, Oliver B. Scott, Alva Hall, George Hickey and Tracy Atherton.

(Substituting for the California Tech)

### HOORAY FOR CRIME

Wished on the Public as the Press Club Permits

Submitted to the Pasadena Post Office as Second Class Literature

### THE ASBESTOS MITT MEN

Foreman.....	TRACY ATHERTON
Assistant Foreman.....	GEORGE HICKEY
At the Bellows.....	LAURANCE SOUTH
At the Forge.....	EDGAR LAYTON
On the Hammer.....	ALVA HALL
On the Die.....	OLIVER SCOTT

A. W. O. L. Member S. I. P. A. (Solid Ivory Press Addicts)

Forged and Pressed at the Mission Iron Works

### THE THIRD RIVET

This issue is the third Rivet to be forced on an unsuspecting student body of this institution and we sincerely hope it is not the last. For the enlightenment of the Frosh it is the blow-off valve for the writers of the school publications who are to be new members of the Press Club.

This year an attempt has been made to steer clear of the "razzing" and turn the constructive powers into a humorous strain and although the paper does include several "razzes," which without question will be taken in the proper spirit, the bulk of the periodical is given over to the "light fanatic."

### AS TO THE STAFF

Never before was such a group of fearless writers gathered upon one staff and pledged to expose the crimes of professors and students alike in the

annual reform movement. Many are the men that will cringe before this pointing literary finger and almost that number will correct their faults (at least for a week or two), and in the meantime if anyone should happen to ask the whereabouts of the staff, they have gone on their vacation.

### ONCE MORE

And now let's get serious. When one begins to talk about patronizing the firms that advertise in the Tech you fellows need a razz and you know it.

In fact so few of you buy from the Tech advertisers that they consider their "ad" just a donation to keep a college paper going. That is not the way to get the publication anywhere, for they are business men and not in the habit of having their investments turn into contributions.

## Emancipation Day

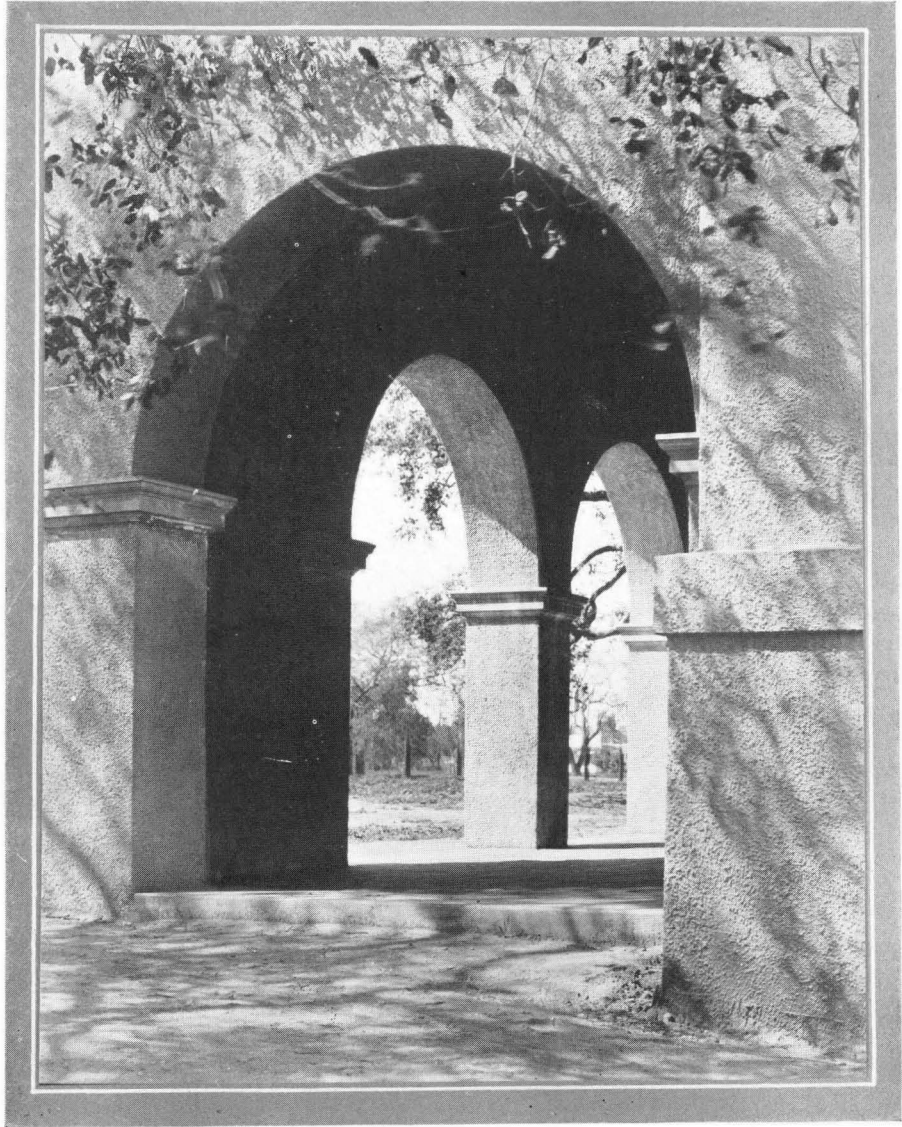
THE class of 1924 initiated a freshman emancipation day, and this event has since become an established tradition of the freshman class.

Shortly before the close of school in nineteen twenty-one, the freshmen invited the school to attend a celebration, the nature of which was not disclosed, to be held in front of Throop Hall one noon. Imagine the astonishment of the upperclassmen when the "pea-greeners" lit a bonfire, tore the green brims from their caps, and together with other relics of "freshmandom" burned them in the fire. They next formed a huge serpentine and proceeded to violate every freshman tradition. They met opposition at the front door in the form of the Sophomores, but were able to force themselves through the door and up the north stairs.

Due to the ferocious nature of the encounter it was decided to abolish the fight, but to preserve the tradition as a pure ceremony, and since that year it has become one of the events to be looked forward to by all freshmen.

The class of 1926 made known its "emancipation from the green" shortly before the end of the school year. The student body at large stood by, while the emancipated freshmen burned their colors, and broke every existing freshman tradition. During the last week of school the freshmen enjoyed the full privileges of a "Tech man."

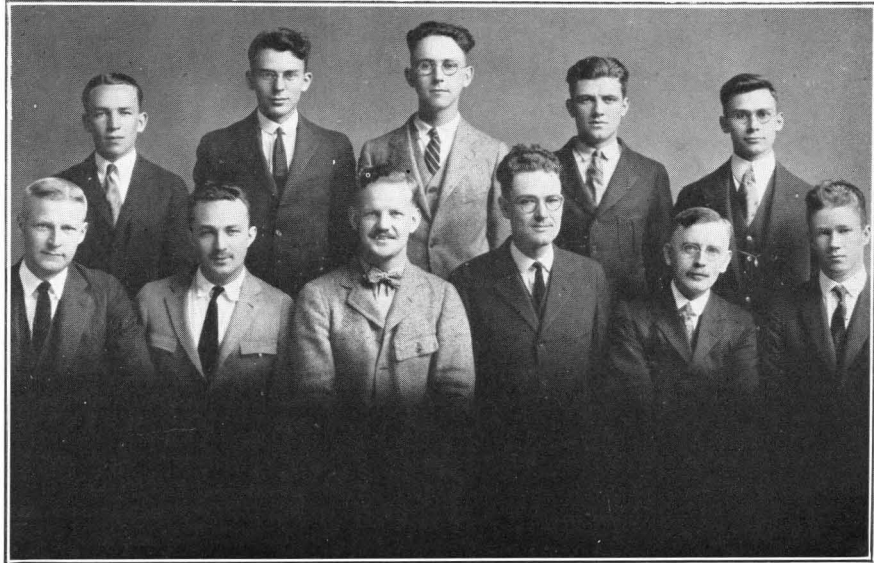
It is the sincere wish of every freshman class that this ceremony be carried on as one of the established traditions in Tech.







# INSTITUTE ACTIVITIES



MAURER MORRELL THAYER SCOTT BLAKELEY  
CLEMENT KILHAM BECK NEWTON MacARTHUR WALKER

## Debating

WHILE Tech does not stand even near the top of the percentage column in debating, the season was by no means a failure. The winning or losing of a debate is not as definite a gauge of the strength or weakness of a team as the result of a game in a sport. A slight advantage or an overwhelming defeat may be announced alike as a two to one decision. The debates given by Tech teams this year have been a credit to the Institute, and have demonstrated the fact that engineers can speak as well as study.

The work of the past season has left the foundations of an exceptionally strong team for next year, for not only will all of this year's varsity, with the exception of Blakeley, be back next season, but there are also some Freshmen who give promise of making some of the varsity work for their places. With the experienced men back and new material to draw from, it will be indeed remarkable if next year does not see a pleasing sort of forensic history written at Tech.

The Freshmen have started their debate schedule with two victories, and show promise of keeping up the good work. As the greater part of their season is yet to come, little can be said definitely of what will be done.

A review of the forensic season would indeed be incomplete without

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## ACTIVITIES

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mention of the coaches who have brought Tech to such an enviable position in her third year of participation in debating. Dr. J. R. MacArthur, head coach, merits the grateful appreciation of the entire student body. He has formulated the policy of the Institute in debating, and as it was at his instigation that forensics were first introduced at the Institute, he may truly be said to be the father of debating at Tech. Mr. A. F. Clement acted as representative at debates held at other colleges, as well as giving his assistance in the work of coaching. Mr. R. B. Brode also assisted in coaching, rendering much valuable advice. It was due to the aid of these men that such an extended schedule was carried on, this season.

### CALENDAR OF VARSITY DEBATES

The question used in all varsity debates was "Resolved that a cabinet parliamentary system of government should be adopted by the United States, Constitutionality waived."

#### I. TRIANGULAR DEBATE WITH WHITTIER AND REDLANDS, FEBRUARY 16

*Negative (At Redlands)*—Lost, 2-1      *Affirmative (At Tech)*—Lost, 2-1  
Team: Newton and Beck                      Team: Maurer and Morrell

#### II. TRIANGULAR DEBATE WITH OCCIDENTAL AND S. B. U. C., MARCH 2

*Affirmative (At S. B. U. C.)*—Lost, 2-1      *Negative (At Tech)*—Won, 2-1  
Team: Kilham and Morrell                      Team: Blakeley and Walker

#### III. TRIANGULAR DEBATE WITH POMONA AND U. S. C., MARCH 16

*Affirmative (At Tech)*—Won, 2-1      *Negative (At U. S. C.)*—Lost, 3-0  
Team: Scott and Mayer                      Team: Walker and Beck

#### IV. DEBATE WITH SIMPSON COLLEGE, MARCH 22

*Negative (At Tech)*—Lost, 2-1  
Team: Walker and Beck



BECK

JENKINS

ECKERMAN

## Oratory

**A**CTIVITY in oratory is just beginning to take prominence. It is, therefore, a matter for gratification that Tech orators have been able to obtain such good results. The major part of the season is yet to come, so a definite statement of standing is impossible.

In the Extemporaneous Speaking Contest held at S. B. U. C. on December twelfth, Harold Beck placed fourth. Grant Jenkins entered the Hamburger's Oratorical, placing fourth. In the Conference Oratorical Contest to be held at Redlands, Eckerman will represent Tech. The Conger Peace Prize Oratorical on June first will probably show much good material as a considerable number will compete.

Tech may look confidently forward to a bright future in this line of endeavor, as the present team will be back next year, and there promises to be plenty of new material as well.

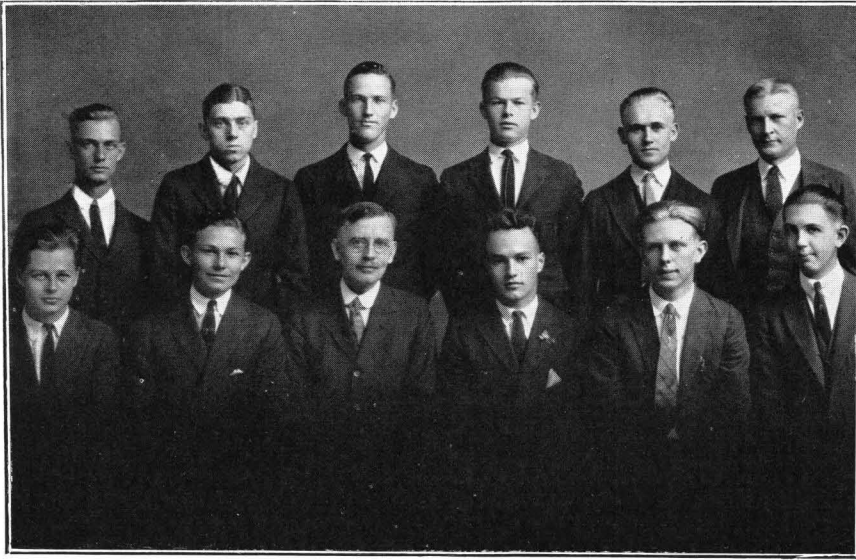
### CALENDAR OF ORATORICAL EVENTS

- I. Dec. 12 Extemporaneous Speaking Contest at S. B. U. C. Beck placed fourth.
- II. Jan. 27 Hamburger's Oratorical Contest. Jenkins placed fourth.
- III. April 27, Conference Oratorical Contest at Redlands. Eckermann tied for second in rank, but was given third place on a percentage basis.
- IV. June 1, the Conger Peace Prize Oratorical Contest.

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## ACTIVITIES

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### Freshmen Debate Squad

#### FRESHMAN SCHEDULE

The Freshmen debated two questions this year, the first the same as that used by the varsity, and the second "Resolved that the United States should enter the League of Nations."

#### I. DUAL DEBATE WITH OCCIDENTAL, MARCH 8

*Question*—"Cabinet Parliamentary"

*Affirmative (At Tech)*—Won, 2-1

*Negative (At Oxy)*—Won, 2-1

Team: Pomeroy and Gilbert

Team: Lewis and Fahs

#### II. TRIANGULAR DEBATE WITH REDLANDS AND S. B. U. C.

*Question*—"League of Nations"

*Affirmative*

*Negative*

Team: Cartwright, Reed, Heilbron

Team: Coleman, Bull, Rodgers

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# BIG T 1923

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## PROGRAM

### "THE ATOMIZER"

*A Musical Comedy in Three Acts*

Book by W. L. Stanton

Music by Lawrence R. Cook

Orchestration by Mrs. E. S. Minkler

#### SYNOPSIS

Act I. On board a ship in New York Harbor.

Act II. A camp on the Sahara Desert.

Act III. The harem of the Shiek of the village of Hotazhelli.

#### DRAMATIS PERSONAE

Dr. Adams	W. Layton Stanton
Miss Eva	Richard U. Seares
Ned	Donald S. C. Anderson
Dorothy	Harold C. Sheffield
Prof. Poudebat	Hoyt Martin
Mme. Poudebat	Robert Jaffray
Prof. Ludwig	Jack S. Reed
Kenneth	Carter Austin
The Shiek	Walter Ogier and David C. May
Von Hindy	J. Edward Kinsey
Rosie	Loren E. Blakeley
Ship's Officer	Keith M. Wilson
Von Bernstorf	Edward W. Hart
Boys	GIRLS
Ralph V. Blackman	Clarence T. Anderson
Joseph H. Walker	Ernest E. Garnett
Frank H. Wiegand	Howard S. Tackabury
Baker Wingfield	Joy Vanden Akker

#### BANDITS

W. Larribee Bangham  
Walter Ogier  
David C. May  
James T. Mercereau  
Robert O. Stein  
George B. Stone

#### ORCHESTRA

Grant V. Jenkins	Director
Albert A. Merrill	1st Violin
George S. Stewart	2nd Violin
Dwight A. Degnan	Clarinet
Donald S. Stone	Cornet
Albert S. Gould	Bass Viol
Paul L. Stoker	Trombone
Paul E. Noll	Piano
Hugh Le Roy Chaffee	Drums

#### TECHNICAL ASSISTANTS

Stage Manager	C. Gilbert McProud '25
Assistant Stage Manager	Alfred A. Newton '25
Chief Electrician	Harold J. Martin '25
Property Manager	Joachim Voelker '26
Scenery painted by	Richard W. Palmer '25
Assisted by	Al Mills '26
Stage Assistant	Allen L. Laws '25
Stage Assistant	Earl R. Peterson '25

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## ACTIVITIES

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*Don Anderson*



### THE ATOMIZER

Marking the entrance into a new field of student activity, the "Atomizer," an original musical comedy, has established so auspicious a precedent that it has fixed dramatics as a function of the student body.

After the demonstration given by the production, the argument that plays cannot be presented successfully in noncoeducational institutions is entirely refuted. Sheffield in particular gave an imitation of the fair sex that left some of the audience in doubt as to whether he was or wasn't. The other "ladies" of the chorus were equally convincing, leaving little to be desired in the way of feminine pulchritude.

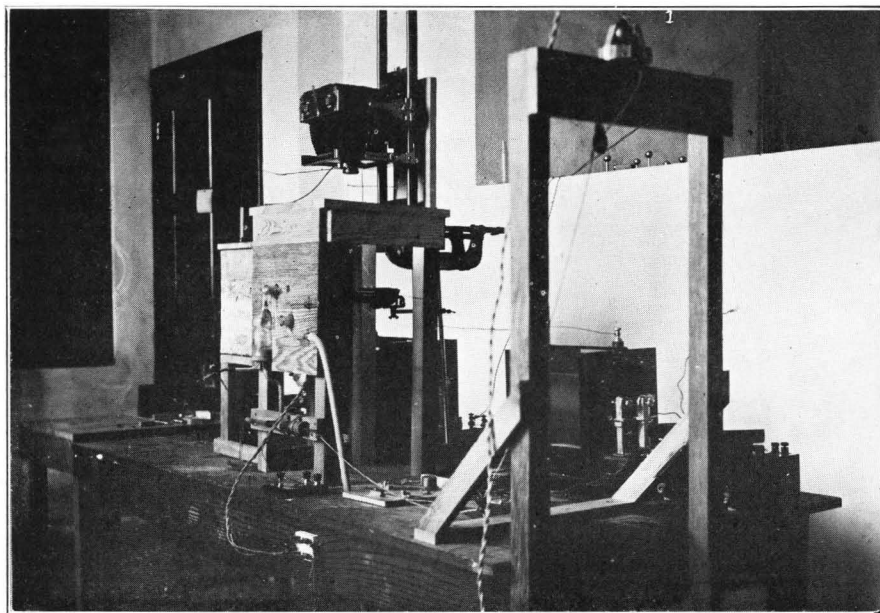
Don Anderson and Sheffield as "Ned" and "Dorothy" were as loving a pair as could be wished. If he keeps on, Sheffield will make someone a good wife.

Mr. Stanton's portrayal of "Dr. Adams" was one of the outstanding features of the "Atomizer." The scientific viewpoint of the professor was continually furnishing cause for mirth. Dick Seares as "Miss Eva," playing opposite the doctor, did commendable work.

"Von Hindy," played by Ed Kinsey, ran away with the honors in furnishing downright amusement. His rendition of "Dot's Just the Way They Say It Back In Potsdam" took the house by storm.

Jaffray lent a peculiarly appealing type of feminine beauty to his delicate interpretation of the part of "Mme. Poudebat." Hoyt Martin as "Prof. Poudebat" played the part of an impulsive and excitable Frenchman to perfection.

Both of the "terrible shicks" took to the part so readily as to make it seem that it suited their natural inclinations. The bandits likewise seemed at home in their roles.



## Research

**R** ESEARCH work becomes a student activity, in the common meaning of the phrase, only when it is pursued because of a student's own choice rather than because of academic duty. Since almost all of the departments of the Institute require the performance of some original work upon the part of the candidate for graduation, most of the members of the senior class are engaged in investigations which fail to come under this definition of a student activity.

One exception to this general statement occurs in the case of Donald H. Loughridge, a photograph of whose apparatus is shown herewith. Loughridge is the only undergraduate worker in the department of physics. He has been working in the tower room of Norman Bridge Laboratory of Physics under the direction of Dr. Robert A. Millikan, making a photographic study of the paths of beta particles when they are ionizing certain rare gases. The object is to find whether or not other inert gases, which, chemically, have the properties of helium, are capable, like helium, of diatomic ionization. It is expected that this will give definite information concerning the molecular structure of these gases.



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## ACTIVITIES

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Two undergraduates have undertaken to obtain information for the benefit of the Mount Wilson Observatory of the Carnegie Institution. These are L. Merle Kirkpatrick and Robert E. Peffer, who are working jointly under the direction of Mr. Harold D. Babcock. Their problem is to obtain samples of the haze which frequently obscures the mountains, especially during the summer months, in order microscopically to determine its constitution and also to investigate its distribution between various limits of altitude. It is the ultimate purpose to decide whether or not the presence of the haze causes any appreciable error in the astronomical observations made through it.

In the department of chemical engineering, Donald S. C. Anderson, working under the direction of Dr. William N. Lacey, is attempting to devise a method for the utilization of copper ores in which the proportion of copper is so low that the pure metal cannot be secured by the usual methods. Although impure copper compounds may be obtained from these ores without great difficulty, Anderson hopes to be able to find and make commercially practicable a procedure for using them in the manufacture of chemically pure copper sulfate.

The greatest number of student research workers, however, are endeavoring to solve purely chemical problems. Several of these men, working under the immediate direction of Dr. David F. Smith, are seeking data on the physical-chemical question of the oxidizing potential of sulfuric acid. In order to calculate this oxidizing potential, they are studying different associated reactions, each of which will furnish a basis for a check upon the final result. One of these reactions is that between sulfuric acid and hydriodic acid, by which sulfur and iodine are formed. Altho this is apparently a reaction whose equilibrium constant will indicate immediately the oxidizing potential desired, Joseph E. Mayer, who is trying to use this reaction, has found that it is not perfect, due principally to the difficulty of obtaining pure substances with which to work. Another reaction, whose rate of reaction is being determined, is that in which sulfurous acid acts upon mercurous sulfate to produce sulfuric acid and mercury. This work is being done by Vladimir A. Kalichevsky.

Frederic A. Hough is trying to obtain the free energy of stannous sulfate by finding the electromotive force of a cell of which one electrode is mercurous sulfate and mercury and the other is stannous sulfate and tin. This electrolysis must be carried on in a solvent which does not itself ionize, but which permits the ionization of its solutes, conducts electricity, and does not react with these

electrodes. Various possible solvents for this purpose are being investigated by Palmer Miller, among them being pyridine and certain other organic liquids. The extent to which a dissociation reaction proceeds is also being ascertained by means of measurements of the gas pressure over the dissociating substance. This is being done by Warren P. Baxter, who is measuring the dissociation pressure of stannous sulfate into sulfur dioxide and stannic oxide. Another measurement of gas pressure is being made by Paul L. Magill, who is determining the equilibrium constant for the reaction by which hydrogen reduces stannic oxide to stannous oxide and water.

In addition to his studies indicated above, Hough has, during the year, made a series of determinations of the molecular weight of stannic iodide, the results of which have been sent to the American Chemical Society for publication in the Journal.

Other undergraduate chemical research includes that done in the field of analytical chemistry by Nathan F. Scudder, who has been concerned with devising, testing, and perfecting processes in the system of qualitative analysis which had not been completed by the work done at the Institute last summer. Most of this year's work has been on two groups of elements, now provided for in the system of analysis. One of these, the "gold group," comprises platinum, palladium, gold, and mercury; the other, the "thallium group," consists of thallium, silver, and lead. This work has been under the direction of Dr. Arthur A. Noyes. Scudder has also been working upon the problem of devising and testing a device which should improve the conditions of a reaction in which it is necessary to introduce a low boiling liquid or a gas into a reaction mixture which is relatively hot. The most successful piece of apparatus for this purpose that has been tried is a special type of centrifugal stirrer which is introduced into the reaction flask. The reaction upon which it is being tested is that in which ether is prepared by the introduction of alcohol into hot ethyl sulfuric acid. The preparation of esters also belongs to this class of reactions.

If, as is announced in the annual catalogue of the Institute, the scientific courses "aim to surround the student with the atmosphere of research," "in order to train the creative type scientist and engineer," surely in this number of voluntary research workers lies the proof that this goal is being attained.

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## ACTIVITIES

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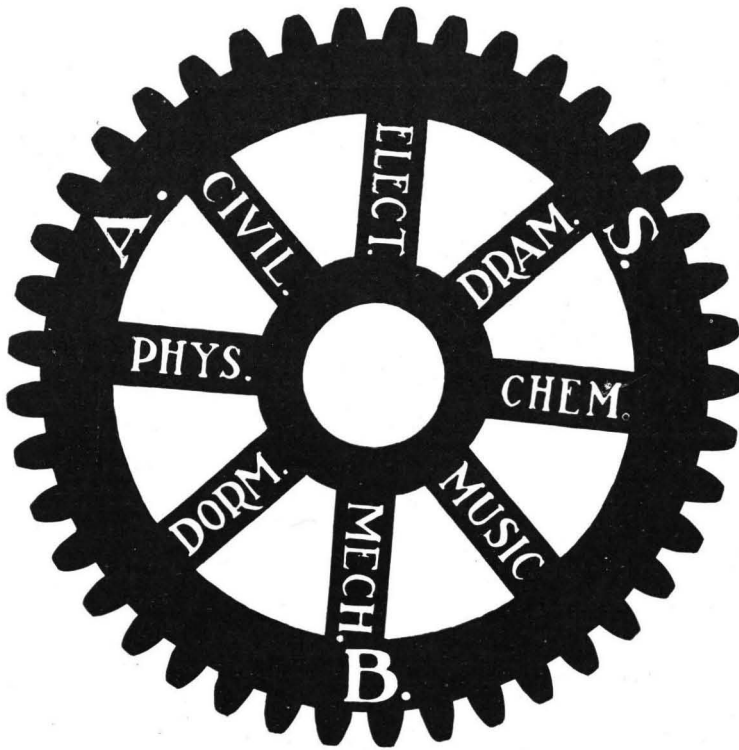
### Frosh Education

**T**HERE were two extra-curriculum subjects required of all Frosh. These were administered in addition to the usual course in pole rushing; required no preparation on the part of the student and gave no credit. The first was in the art of retiring to cover in inclement weather. The second was in minor tactics, covering mainly the attacking of strong bodies of the enemy established in superior positions.

The first course, given by Sgt. Bailey and assistants (unknown and unexpected), was one that will long be remembered. The occasion was to have been the taking of a picture of the Freshman Class assembled on the steps of Throop Hall, but unfortunately just as the camera clicked a deluge descended upon the unfortunate youngsters leaving them no choice but to retire in the best order possible and give thanks that there had been no more. Later some brilliant mind surmised the fact that the Class of '25 might have been involved in the affair, but at the time, all were too wet to credit any agency other than Providence.

The course in minor tactics was of even longer duration than that of coming in out of the rain. A few enterprising Frosh raised a standard and managed to secure it firmly to the top of the pole and remove the rope. As the pole could not be climbed, it was believed that a new tradition had been established, at least until the flag wore out. The Class of '25, however, was not so easily outwitted. A hook was mounted on reinforcing rods and run up the pole to the flag. Then was the flag of the youngsters indeed degraded and flaunted before all in an evil condition.





ORGANIZATIONS.

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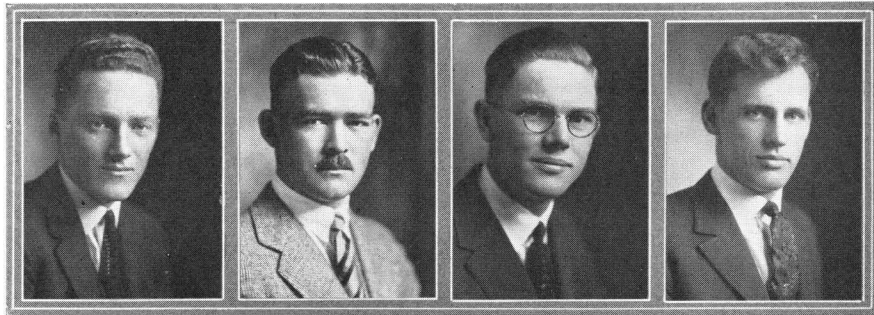
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BIG T 1923

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GIBERT

EVANS

GROAT

TELLWRIGHT

## Associated Student Body

Bernard G. Evans - - - - - President  
 Fred J. Groat - - - - - Vice President  
 F. Douglas Tellwright - - - - - Secretary  
 Walton Gilbert - - - - - Treasurer

### COMMITTEES

#### HONOR KEY

Harold R. Preston, Chairman  
 Alfred A. Newton  
 Edgar N. Layton

#### EXHIBIT DAY

Harold R. Beck, Chairman  
 Robert E. Peffer  
 Ralph Siegfried  
 Grant V. Jenkins

#### ATHLETIC

Charles S. Howard, Chairman  
 Fred J. Groat  
 Walton Gilbert

#### MUSICAL

Grant V. Jenkins, Chairman  
 Bernard G. Evans

#### ELECTION

F. Douglas Tellwright,  
*Chairman*  
 Robert E. Peffer  
 Ralph Siegfried

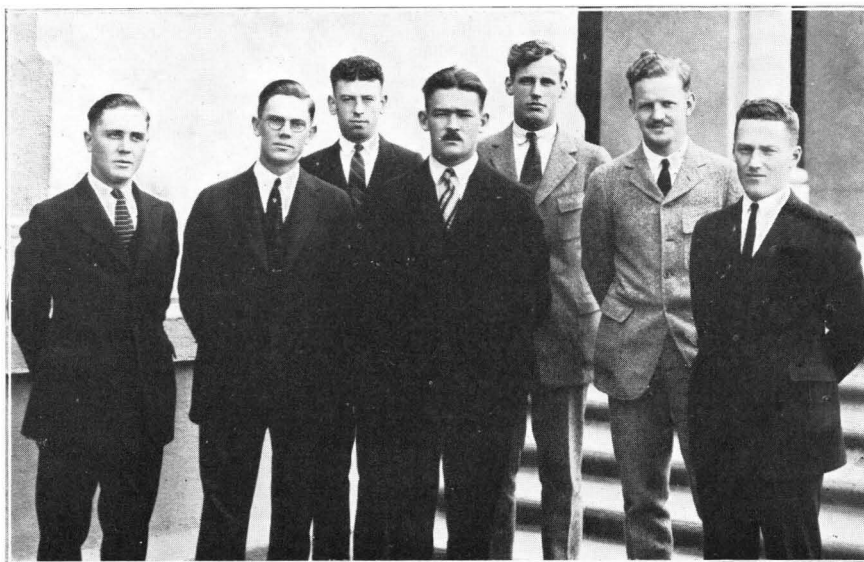
#### FOOTBALL BANQUET

Donald F. Morrell,  
*Chairman*  
 Harold R. Beck  
 F. Douglas Tellwright  
 Alfred A. Newton

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## ORGANIZATIONS

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### EXECUTIVE COMMITTEE

BERNARD G. EVANS	- - - -	<i>President</i>
FRED J. GROAT	- - - -	<i>Vice-President</i>
F. DOUGLAS TELLWRIGHT	- - - -	<i>Secretary</i>
WALTON GILBERT	- - - -	<i>Treasurer</i>
CHARLES S. HOWARD	- - - -	<i>Athletic Manager</i>
OLIVER B. GARVER	- - - -	<i>Publicity Manager</i>
HAROLD R. BECK	- -	<i>Representative-at-Large</i>
RALPH SIEGFRIED	- -	<i>Representative-at-Large</i>

SEVERAL innovations in the student body program were very successful during the past year. The new system of athletic management which provides for an Athletic Manager with an assistant for each department has proven to be a satisfactory solution of what bade fare to be a complex problem. The creation of a Manager of Musical organizations has given direction and efficiency to two hitherto little appreciated institutions, the Glee Club, and the Band.

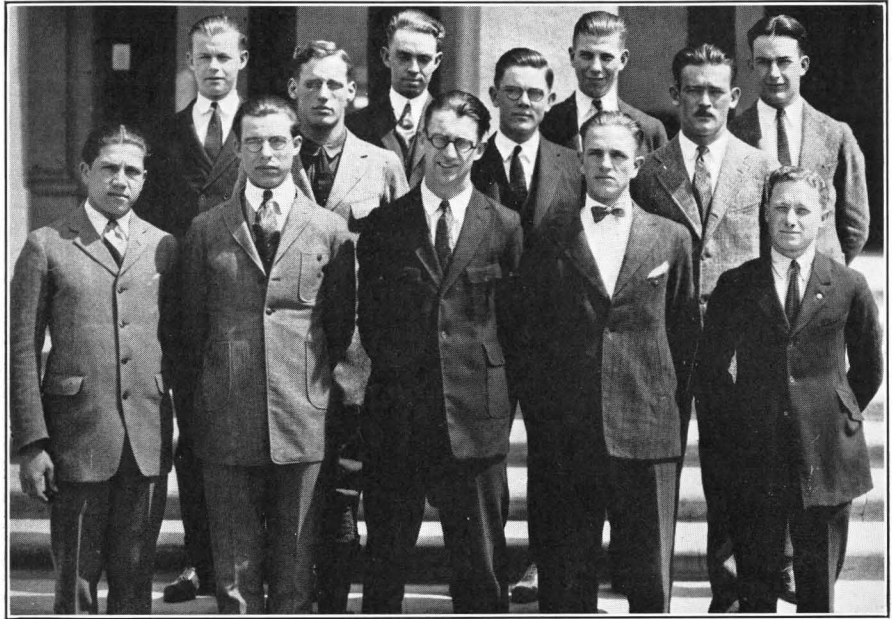
Because of more efficient management, the Annual and the weekly paper ceased to be financial burdens of the Student Body. Perhaps the most significant advance made this year is the remarkable development of the student athletic program which has progressed under the capable leadership of Head Coach W. L. Stanton.

With the co-operation of the Administration, a system was established whereby the Student Body, by raising its term dues slightly, and accepting some financial assistance from the Institute, could liquidate its debt in three years.

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BIG T 1923

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HEILBURN                      SALSURY                      GANDY                      ANDERSON  
   TELLWRIGHT                      GROAT                      EVANS  
GOLDSMITH                      BANGHAM                      McFARLIN                      ALCORN                      WALKER

BOARD OF CONTROL

OFFICERS

Fred J. Groat (*Chairman*)

F. Douglas Tellwright (*Secretary of the A. S. B.*)

SENIOR MEMBERS

Bernard G. Evans                      Max B. Alcorn  
W. Larrabee Bangham                      C. Perry Walker

JUNIOR MEMBERS

Kenneth B. Anderson                      E. Harold Gandy  
Morris Goldsmith

SOPHOMORE MEMBERS

Gerald H. McFarlin                      Markham E. Salsbury

FRESHMAN MEMBER

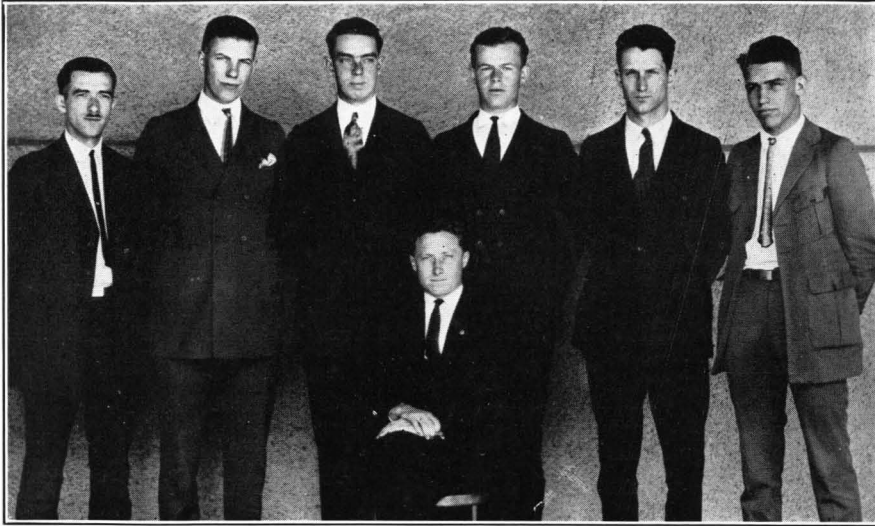
Robert F. Heilbron



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## ORGANIZATIONS

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### Court of Traditions

#### CALENDAR

The Court of Tech Traditions held on the afternoon of December 7, 1922 was the first meeting of the Court to try Freshmen.

The following Frosh were tried and found guilty:

Frosh Jaffray was convicted of neglecting to shave. The Court held that because he considered the growth fuzz, was not sufficient cause for this great negligence on his part. He was sentenced to shave publicly on the steps of Throop Hall at 12:30 p. m. on the afternoon of December 12, 1923.

Frosh Kaye was convicted of smoking other than a corn cob pipe on the campus. The Court held that his ignorance of the fact that the football field was a part of the campus made his offence more serious. He was sentenced to wear a sign all day to his classes reminding everyone that he was caught smoking a cigarette and would never do it again.

Frosh Kemp was convicted of neglecting to appear with a clean shaven face. The Court held that the failure to get up in time to shave was the worst of crimes for Tech men. His punishment was to bathe Apollo's pedal extremities for twenty minutes on the afternoon of December 11, 1923.

The next meeting of the Court was on January 28, 1923.

Frosh Bawbell was convicted of absolute refusal to buy and wear the traditional Frosh cap. The Court considered this offense very serious and sentenced him to the stocks for three hours on February 1, 1923.

Frosh Heilbron was convicted of forgetting to wear his cap. He was sentenced to sweep the walk between the Dormitory and Throop Hall on the afternoon of February 2, 1923.

Frosh Penfield, Parker, and Milne were dismissed due to the fact that they made an extra effort to get their caps back after losing them.

The third meeting of the Court was held on the afternoon of February 15, 1923.

Frosh Johnson was tried and found guilty of ditching assembly. Due to his rebellious conduct at the trial the Court decided on a very severe punishment. He was hobbled for the day of February 20, 1923.

Frosh Serurier was convicted of willfully ditching assembly for no reason whatsoever. The punishment was to wear hobbles for the day of February 21, 1923.

Frosh Zabaro was convicted of ditching assembly. His punishment was extra work on the track. Date of punishment was February 22, 1923.

Frosh Nordquist was convicted of not going to assembly. He was sentenced to four hours work on the track, on the afternoon of February 22, 1923.

Frosh Grant was dismissed because of lack of evidence.

Frosh Penfield was sentenced to two hours of extra work on the track February 22, 1923. He was found guilty of wearing a necktie which was red.

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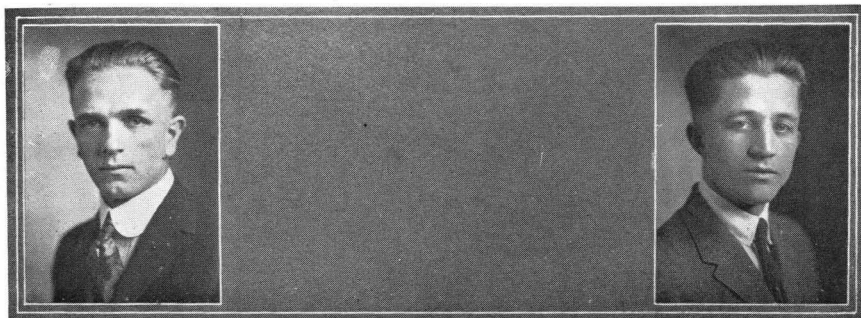
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BIG T 1923

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ALCORN

HICKEY

STAFF OF THE CALIFORNIA TECH

*Editor-in-Chief* - - - - - MAX B. ALCORN  
*Business Manager* - - - - - GEORGE I. HICKEY

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*News Editor* - - - - - ALFRED A. NEWTON '25  
*Sporting Editor* - - - - - OLIVER B. SCOTT '25  
*S. I. P. A. Editor* (Two Terms) - - - - - LOREN E. BLAKELEY '23  
*S. I. P. A. Editor* (One Term) - - - - - LAWRENCE W. HALL '24

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*Advertising Manager* - - - - - HAROLD GANDY '24  
*Assistants—*  
 SAMUEL L. DIACK '25, M. IRVEN HOFFMAN '25, ALBERT J. FERKEL '25  
*Circulation Manager* - - - - - L. DEAN FOWLER '23  
*Assistant* - - - - - EARL R. PETERSON '25

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PARKER '24 (1st Term) DOUGLAS SELLERS '24 JACK L. FAHS '26  
 EDGAR N. LAYTON '24 RICHARD S. CAREY '25 HERBERT V. INGERSOLL '26  
 ROBERT E. PEPPER '24 JAMES C. KROUSER '25 WALLACE C. PENFIELD '26  
 ROBERT S. RIDGWAY '24 JOSEPH H. WALKER '25 LEW FAY '26 (1st Term)  
 GEORGE W. CLAPP '26

SPORT REPORTERS

ALVA C. HALL '23 ORVAL E. LIDDELL '24 JACK E. MAURER '25

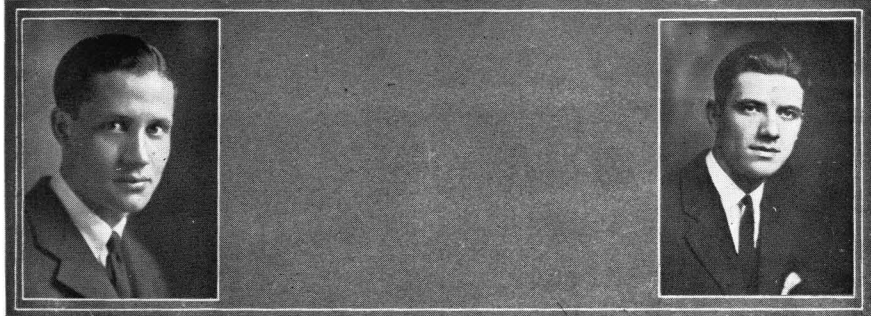
FORMER TECH MANAGERMENTS

YEAR	EDITOR	MANAGER
1918-19 (Sept.-April)	DOUGLAS A. STROMSOE	LESTER O. WARNER
(April-June)	SINCLAIR SMITH	{ WYNNE B. MULLIN DON McCREERY
1919-20 (Sept.-Feb.)	SINCLAIR SMITH	WYNNE B. MULLIN
(Feb.-June)	SINCLAIR SMITH	ARTHUR J. GARFIELD
1921-22	CHARLES W. VARNEY	BEN BENIOFF

## ORGANIZATIONS



RIDGEWAY	PEFFER	OWENS	LAYTON	SELLERS
FOWLER	CAREY	KROUSER	WALKER	CLAPP
ECKERMAN	ALCORN	HICKEY	ATHERTON	HALL
INGERSOLL	BLAKELEY	NEWTON	SCOTT	FAHS
PENFIELD	LIDDELL	GANDY	MAURER	FERKEL
	HOFFMAN	DIACK	PETERSON	



McKEE

SCOTT

THE Annual has been a feature of every graduating class since 1916. While until five years ago it was merely an enlarged edition of the monthly magazine, the size of the edition has more than kept pace with the growth of the Institute.

The Annual this year is the fourth of a series of the same size and general make-up, and the third to bear the title "Big T." While certain changes in arrangement have been made which the editors believe will make the book a more interesting resume of the year's activities, the division of the Annual into separate books which has proved so successful in the past has been followed this year. Each department editor has worked with his own staff in preparing the material in the several books. The entire edition was supervised and put together by the editor-in-chief.

#### ANNUAL PUBLICATIONS

- 1916—Kenneth W. Rich (editor), Stanley C. Carnahan (manager).
- 1917—I. N. Lawson, Jr., Walter W. Ogier, Jr.
- 1918—(April) Frank R. Capra, Warren C. Mansur.
- 1918—War, (Sept.) Relta Alter, Joseph C. Hartley.
- 1919—Gerald C. MacMullen, Kenneth C. Kingsley.
- 1920—George O. Suman, Jr., Howard G. Vesper.
- 1921—Arthur J. Garfield, Jr., Manton M. Barnes.
- 1922—Howard G. Vesper, Ray W. Preston.
- 1923—George T. McKee, Oliver B. Scott.



## Technical Societies

**T**HERE are four technical societies on the campus at present and to them is due the credit for a good deal of course and class spirit and activities.

To every student who is seriously following his studies here at Tech, the desire and the advantage of being affiliated with that technical society which is helping to find and point out the new technical knowledge in the field which he intends to follow becomes apparent. He realizes that it is to his advantage to associate with students who are doing the same work that he is doing now and who will be engaged in the same kind of work that he will be engaged in when undergraduate days are left behind and the principles he is learning now are being put in practice. Not only is the student benefited by the knowledge that comes to him through the society or club in the form of technical papers, lectures, and motion pictures dealing with specific phases of engineering, but he is also helped, probably even in a greater degree, by that which he can contribute to the organization in the form of papers or talks he has prepared and labored over, for it is a well known fact that knowledge does one very little good unless it can be given to others in a form that will be understood and comprehended.

# American Institute of Electrical Engineers

## OFFICERS

HAROLD PRESTON - - - - - *Chairman*  
CHARLES STORMS - - - - - *Secretary*

THE Student Branch of the American Institute of Electrical Engineers has grown from a membership of five after last year's graduation to a present membership of thirty-seven. All engineering students of the three upper classes are eligible for membership in the society and are kept in touch with the engineering world through the journal published monthly, the student meetings, and the association with practicing engineers at the meetings of the Los Angeles Section. The A. I. E. E. Journal is the official publication and includes all interesting papers presented before various section meetings. The Los Angeles Section meetings have been very instructive and interesting and many of the student members have attended regularly.

At the first branch meeting forty-five members and visitors heard a lecture given by Professor Sorensen on "High Voltage Phenomena." This lecture covered the history of all high voltage development and the design of the million volt transformer which Professor Sorensen superintended.

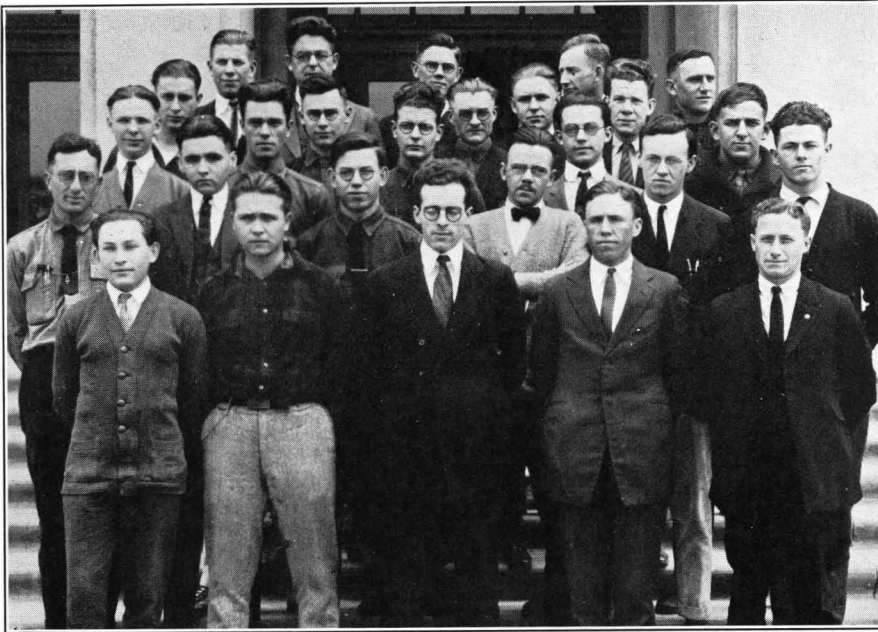
Two other local meetings are scheduled for this term. Dr. Williams has been studying a series of articles presented in the A. I. E. E. Journal in preparation for a lecture on "The Magnetic Effects on Conductors." Mr. Mendenhall of the U. S. Motors Company will be the speaker of the second meeting and will talk on engineering and economic problems met with in the manufacture of electric motors.

Plans for a bigger and livelier section here at the college are under way for the coming year.

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## ORGANIZATIONS

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### MEMBERS

Clifford L. Ashley  
Floyd A. Baker  
Martin L. Beeson  
Loren E. Blakeley  
John Carr  
Jule Coffey  
William C. Dreyer  
Roy O. Elmore  
Harold Endicott  
Lawrence G. Fenner  
Charles E. Fitch  
L. Dean Fowler  
Harold Gandy  
Albert Gould  
Fred Groat  
Robert J. Hammond  
David Harries  
William Holladay  
Thomas M. Hotchkiss

David T. Jones  
Walter Jones  
Maurice Landau  
Allen Laws  
Edgar Layton  
Fred G. Little  
Clifford Maltby  
Charles G. McProud  
Hollamy E. Mendenhall  
Richard H. Merrill  
John R. North  
Cecil N. Parker  
Harold Preston  
Douglas Sellers  
Robert J. Schonborn  
Clement B. Stern  
Charles Stearns  
Charles Storms  
Joseph H. Walker

C. Perry Walker

## American Institute of Mechanical Engineers

**T**HE trend of thought among American engineers is in the direction of greater devotion to "the good of mankind." This underlying motive has been most effectively stated in the preamble to the Constitution of The Federated American Engineering Societies:

"As service to others is the expression of the highest motive to which men respond and as duty to contribute to the public welfare demands the best efforts men can put forth, now therefore, the engineering and allied technical societies of the United States of America, through the formation of The Federated American Engineering Societies, realize a long cherished ideal,—a comprehensive organization dedicated to the service of the community, state and nation."

It is with a deep sense of satisfaction that the local student branch of the American Society of Mechanical Engineers finds itself affiliated with an organization that has been built up with these principles in mind and whose activities have been governed by them.

At the regular weekly meetings of the society, papers are generally presented by student members, and at the special meetings some prominent outside engineer usually speaks. One of these special meetings, given in the form of a smoker through the courtesy of the Pharos, remains in the minds of those who attended as especially valuable and entertaining. At this smoker F. von Schlegell, an eminent local engineer, gave to those students who were fortunate enough to be present, a very comprehensive idea of the actual conditions the new engineer will have to face. On another occasion the members of the local student branch were the guests of the Los Angeles Branch of the A. S. M. E., and the dinner, which was followed by a lecture, will be remembered by them with pleasure.

It is in services of this kind that the Student Branch of the A. S. M. E. finds its place and its work in Cal-Tech student life.



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## ORGANIZATIONS

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### MEMBERS

Charles D. Adams  
Max B. Alcorn  
Kenneth B. Anderson  
Laurence Broady  
Edgar M. DeRemer  
Lyle Dillon  
Carlton H. Eckermann  
Walton Gilbert  
Alva C. Hall  
Douglas G. Kendall  
Oliver W. Kilham  
Eugene Kirkeby  
Warren B. Leavitt  
Orval E. Liddell

Hallan N. Marsh  
Gerald H. McFarlin  
Roy E. Miller  
Donald F. Morrell  
Clarence R. Owens  
Hubert A. Reeves  
Robert S. Ridgway  
Lawrence P. Roth  
Stanley T. Schofield  
Laurance G. South  
Lyman P. Stoker  
Rolland S. Thomas  
Robert M. Whiting  
Edward A. Wilson

## American Society of Civil Engineers

### OFFICERS

DOUGLAS A. STROMSOE	-	-	-	-	-	<i>President</i>
OLIVER B. GARVER	-	-	-	-	-	<i>Vice-President</i>
ARTHUR G. DUNCAN	-	-	-	-	-	<i>Secretary</i>
GEORGE N. RAMSEYER	-	-	-	-	-	<i>Treasurer</i>

THE American Society of Civil Engineers, Student Branch, has for its aim the development of the highest ideals of engineering practice and the stimulation of ambition and incentive. A close connection is maintained with the headquarters of the Society and with the Los Angeles Chapter, whose meetings are open to the members of the Student Chapter. A great deal of benefit is derived from these meetings.

In addition to the regular business meetings two special meetings have been held; the first, at which Professor Thomas spoke, was held during the first term. Professor Thomas told the meeting of his trip down the Colorado River in company with the exploration party composed largely of government engineers, to examine nine dam-sites in Glen Canyon. His talk was illustrated with photographic projections and proved highly interesting and educational. The speaker for the meeting held during the second term was Mr. J. Mayer, Assistant Chief Engineer for the Government on the construction of the Quebec Bridge. Mr. Mayer's narration of the difficulties encountered during construction was highly instructive.

The high degree of success which has been attained this year is due largely to the efforts of the President, Douglas A. Stromsoe, with the able assistance of the other officers.

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## ORGANIZATIONS

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### MEMBERS

R. E. Alderman	J. E. Maurer
Tracy Atherton	K. C. McCarter
W. L. Bangham	George T. McKee
H. A. Barnett	L. M. Miller
D. A. Blackburn	Max Moody
R. R. Boorey	J. E. Moore
C. A. Burmister	E. R. Peterson
E. D. Cornelison	J. W. Piper
Lamberto de la Rocha	H. F. Pope
A. G. Duncan	George Ramseyer
F. M. Foster	M. E. Salsbury
Royal Fowler	H. R. Schumacher
E. E. Garnett	R. H. Skinner
O. B. Garver	Elmer Smith
G. L. Garver	J. H. Smith
Morris Goldsmith	H. O. Springer
H. W. Goodhue	Clair Staley
H. V. Gridley	R. O. Stein
C. H. Heilbron	D. A. Stromsoe
C. S. Howard	N. H. Templin
D. W. Keech	E. E. Winckel
W. S. Kingsbury	Paul White
R. F. Lovering	Robert Woods

## Chem Club

### OFFICERS

H. TODD NIES	-	-	-	-	-	-	-	<i>President</i>
WILLARD H. TRACY	-	-	-	-	-	-	-	<i>Vice-President</i>
FREDERICK A. HOUGH	-	-	-	-	-	-	-	<i>Secretary</i>
JOSEPH E. MAYER	-	-	-	-	-	-	-	<i>Treasurer</i>

THE past year has again been a very successful one for the Chem Club. The members met on Wednesday of each week and enjoyed lunch together, coffee and doughnuts being served occasionally by the Club. After lunch, the meetings were devoted to talks or demonstrations by some member of the Club on a subject of chemical interest. Several good talks on laboratory technique were given during the year. An exceptionally valuable lecture was given by Dr. A. M. Patterson on "Chemical Literature and Its Use."

The organization aims to create a personal contact between professors and students by means of its meetings and the several hikes enjoyed each year. New students in Chemistry are always made to feel welcome in the Club.

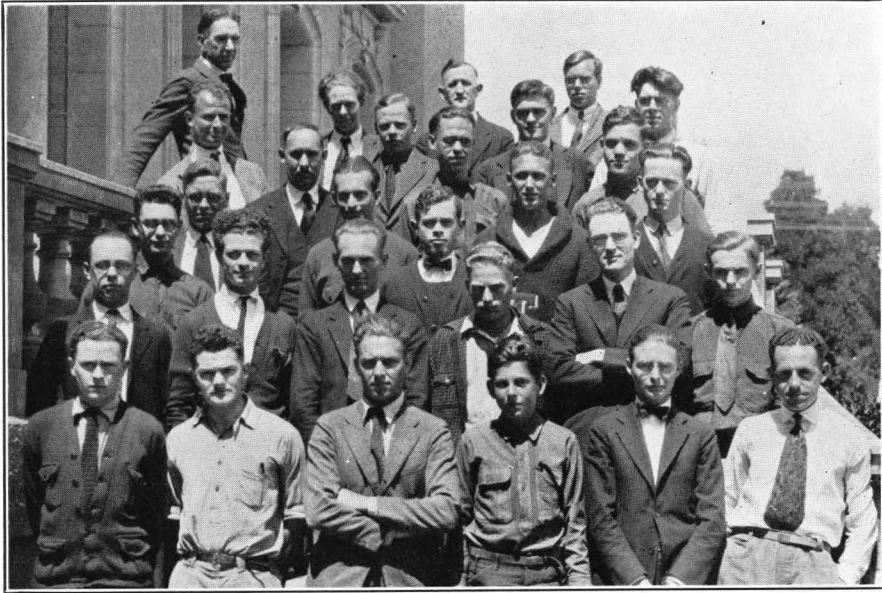
Each term the Club aims to take one or two hikes into the mountains. Early in November a bunch journeyed to Camp Baldy for the week end and encountered a great deal of snow. During the second term another trip was taken, this time to Oak Glen. The hills were covered with snow at that time and every one enjoyed skiing and tobogganing.

Plans are already in hand to make next year even more successful than the past year has been.

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## ORGANIZATIONS

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### MEMBERS

Dr. Arthur A. Noyes  
Dr. Austin M. Patterson  
Dr. James H. Ellis  
Dr. James E. Bell  
Dr. William N. Lacey  
Dr. Arthur F. Benton  
Prof. Howard J. Lucas  
Mr. Robert Loufburrow  
Joseph R. Alcock  
Richard M. Badger  
Willard E. Baier  
Sidney A. Banks  
Warren P. Baxter  
Richard S. Carey  
L. Bentley Copeland  
Bernard G. Evans  
Harold H. Farnum  
Fred C. Henson  
Ben E. Hess  
Frederick A. Hough

Grant V. Jenkins  
Vladimar A. Kalichevsky  
L. Merle Kirkpatrick  
George C. Kuffel  
Rex L. Loop  
Donald H. Loughridge  
Paul L. Magill  
Joseph E. Mayer  
Alfred A. Newton  
H. Todd Nies  
Robert E. Peffer  
Kenneth W. Ranney  
Albert L. Raymond  
Nathan F. Scudder  
Thomas P. Simpson  
F. Douglas Tellwright  
Willard H. Tracy  
Howard M. Winegarden  
Kai Jin Yang  
J. Ellsworth Youtz

## Aero Club

### OFFICERS

WALTON GILBERT     -   -   -   -   -   -   -     *President*  
MAX B. ALCORN     -   -   -   -   -   -   -     *Secretary*

**B**ECAUSE of the universal interest in aeronautics the Aero Club fills an important place in the life of the Institute. The Club was founded in 1921 by a group of students who were particularly interested in the rapid evolution of aircraft. Its purpose is to foster interest in aeronautics and to prove that there is sufficient interest in this branch of engineering to justify the establishment of a greater number of courses. Professors at the Institute and prominent outsiders appear at the meetings and present papers on one or another phase of the subject. Similar papers are presented occasionally by students, thus giving the benefit of their investigations to other members and developing public speaking so essential to an engineer. During the past year several such papers were presented. The equipment of the Aeronautics laboratory, particularly the wind tunnel, offers adequate facilities for experiments. Full advantage of this opportunity was taken by the members of the club who united their efforts in an attempt to design and build a glider. The general outline followed in the design was the Hanover glider which has made the best record. After a series of experiments made in the wind tunnel, the designers decided upon some modifications in the construction which are expected to make the assembling considerably easier. At the present time after several months of experiments, the plans are completed and the glider will be built in the near future. Whether the glider will surpass the records already established or not, the very attempt to design and build it shows an attitude of mind which should be greatly encouraged and is very creditable to the members of the club.

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## ORGANIZATIONS

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### FACULTY MEMBERS

Dr. Harry Bateman

Mr. Albert A. Merrill

### MEMBERS

Max B. Alcorn  
Tracy L. Atherton  
Orrin H. Barnes  
Meridan H. Bennett  
Walter L. Bryant  
Frank C. A. Clayton  
Stephen Detzer  
Richard G. Erickson  
Kenneth M. Fenwick  
Walton Gilbert  
Riley L. Gilbert  
Arthur Greenberg  
Mason D. Hanes

Walter W. Hoffman  
Jack F. Infield  
Walter S. Johnson  
Carl B. Knox  
Harold J. Martin  
Lewis S. McClain  
Gerald H. McFarlin  
Wilfred M. Noble  
Richard W. Palmer  
Harry L. Remington  
Lawrence P. Roth  
Willis W. Weber  
Ralph C. Wilson

## Young Men's Christian Association

**T**HE past year has again been a very successful one for the Young Men's Christian Association. A concentrated effort was made at registration time to induce all students to join the Association. Two hundred and thirteen were admitted to membership by the action of the cabinet.

Undoubtedly the most good has been accomplished through the employment bureau, by means of which many students were enabled to obtain work, which made it possible for them to remain in college. The Association also took the responsibility of locating rooms and board for students coming from a distance. The Church Council, formed at the end of last year, has been very active throughout the year interesting men in the various Pasadena churches. Every Wednesday noon a small but sincere group of men met in a discussion group very ably led by Dr. McArthur to discuss the religious problems of the college man.

During the first week of registration a stag party in reception of the Freshmen was held in the Dormitory. The "Y" again served apples and doughnuts to the Freshmen who cleaned the "T." Two hikes were taken during the year to the Mt. Wilson observatory, where the students were permitted to inspect the telescope. The climax of the "Y" socials came early in the third term in the form of a skating party at Lincoln Park which was enjoyed by a great number of the student body and their lady friends.

Six men attended the Asilomar Leadership Conference during the Christmas holidays. The opportunity of cultivating intimate friendships with men of other colleges and of hearing the well known Christian leaders who speak at these conferences should be taken advantage of by more men.

A novel form of Handbook was published just before the opening of the college year by the Y. M. C. A. It was printed in a loose-leaf form to fit the students' notebooks, and contained a brief summary of all matters of interest to members of the student body. A copy was mailed to each prospective Freshman three weeks before registration so that he might become familiar with the Traditions, Freshman Rules, and other matters of interest. The volume was edited by Loren E. Blakeley.



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ORGANIZATIONS

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OFFICERS

HAROLD Z. MUSSELMAN	-	-	-	-	-		<i>General Secretary</i>
W. LARRIBEE BANGHAM	-	-	-	-	-	-	<i>President</i>
LOREN E. BLAKELEY	-	-	-	-	-	-	<i>Vice-President</i>
CLIFFORD MALTBY	-	-	-	-	-	-	<i>Secretary</i>
HAROLD GANDY	-	-	-	-	-	-	<i>Treasurer</i>

COMMITTEE CHAIRMEN

MARKHAM E. SALSURY	-	-	-	-	-		<i>Meetings</i>
DOUGLAS W. KEECH	-	-	-	-	-	-	<i>Membership</i>
GEORGE C. KUFFEL	-	-	-	-	-	-	<i>Social</i>
WILLIAM L. HOLLADAY	-	-	-	-	-	-	<i>Social</i>
CHARLES F. STEARNS	-	-	-	-	-	-	<i>Asilomar</i>
FRED J. GROAT	-	-	-	-	-	-	<i>Rooms and Board</i>

# Musical Organizations

**T**HIS year for the first time in the history of the Institute all musical organizations on the campus have been under the supervision of the Student Body, organized under one department head. Formerly the Glee Club and Orchestra were private organizations and the Band was under the supervision of the Military Department. In order to better promote



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## ORGANIZATIONS

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interest in this phase of college life and to offer an incentive for regular attendance at rehearsals, last year's Student Body officially recognized all such organizations as activities. Judging from the first year under the new plan, it is entirely practical, economical in every way, and very successful in promoting interest in musical affairs.

Never before has the Institute been so ably represented before the people of Southern California. Both the Glee Club and Band made several public appearances this season. The Band played at several rallies and furnished music at the football and baseball games. Due to the hard work of both the Glee Club and Band, it has been possible to provide them with white sweaters and monograms. The Band has also been uniformed in white.

### ORCHESTRA

The orchestra began a very promising year under the able leadership of Grant Jenkins, its principal activity during the first term consisting of programs given in connection with the student body assemblies. At the beginning of the second term it became necessary to disband due to the demands made by other activities upon the time of several members of the organization.

The orchestra was instantaneously resuscitated, however, with the beginning of the succeeding term, the new life being due to participation in one of the biggest musical events of the year, the musical comedy "The Atomizer," staged under the direction of Coach Stanton. Membership and instrumentation was as follows:

PIANO	TRUMPET
Paul Noll	Hoyt Martin
FIRST VIOLINS	TROMBONE
Wilfred Noble	Paul Stoker
Neal Smith	SECOND VIOLINS
George Stewart	Marcus Drake
CLARINET:	Alfred Schueler
Edgar Layton	Albert Shonk
BASS	FLUTE
Albert Gould	Joe Walker
'CELLO	DRUMS
Charles Prescott	Roy Chaffee

## The Glee Club

**B**EGINNING the year with the handicap of a club composed almost entirely of new members, the Glee Club has completed its most successful season during the decade since its conception. About a nucleus of only five members of last year's club was built an organization which for balance of parts and fineness of quality and interpretation was second to none in Southern California. This attainment was only possible through the able leadership and untiring effort of Walter W. Ogier, Jr., as director, and the co-operation and faithful attendance of members at rehearsals.

Announcement of tryouts at the beginning of the year revealed a considerable interest in the Glee Club on the part of the student body, and competition was keen for singing positions. The handicap of inexperience, however, was only overcome with long practice and many extra rehearsals.

In the matter of specialty numbers the Club was particularly fortunate this season. Mr. Sidney Weinbaum, of the Karkhoff Conservatory of Music in Russia, added much to the Club's programs with his classical piano performances. A novelty vaudeville act in make-up and costume was put on by May, Martin and Perkins, in which some original touches were added to "Gallagher and Shean." Their performance ended with the introduction of Bob Stein in infantile attire, whose mouth organ produced sounds resembling those of a brass band. High School concert programs included the Wiegand-Degnan-Keech jazz trio. Another feature of the concerts was "On the Road to Mandalay," sung by Mr. Ogier and the quartet, which included Lownes, Bangham, Salsbury and Layton.

A new experience for most of the men was broadcasting from the station of the Los Angeles Times, Radio KHJ. A full program was given which was heard from long distances, word being received that the concert was much enjoyed in Post, Texas.

Abandoning the "board front" and formal evening dress, the Glee Club appeared this season in tuxedos, the change meeting with hearty approval on the part of its audiences. New white sweaters with three-letter monograms were obtained for the Club, which gave the members a snappy appearance at High School concerts.

The concert season, which was particularly successful, included appearances as follows: Institute Auditorium, First Congregational Church of Pomona, Huntington Park High School, Broadcast from KHJ, Lincoln High School, Orange High School, Garden Grove High School, Santa Monica High School and Pasadena High School.

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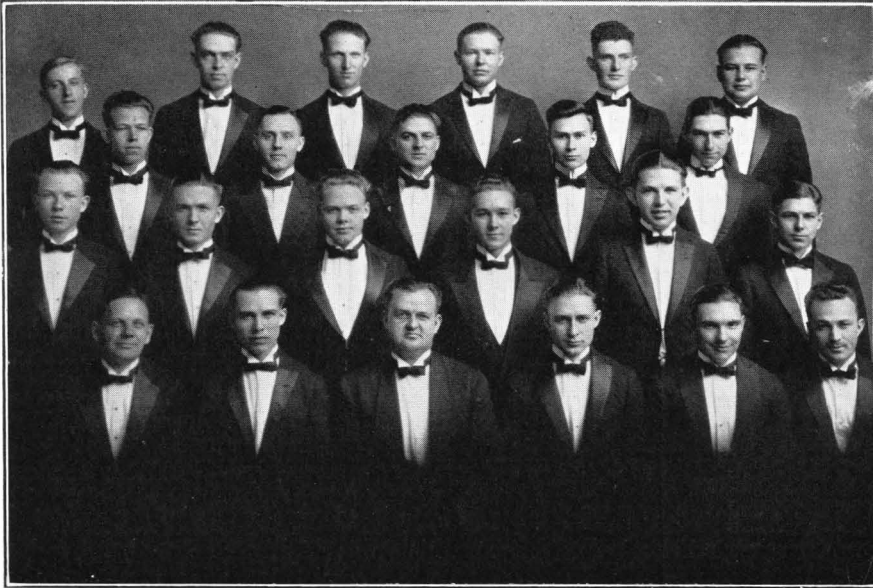
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## ORGANIZATIONS

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### THE GLEE CLUB

WALTER W. OGIER, JR.	- - - - -	<i>Director</i>
W. LARRIBEE BANGHAM	- - - - -	<i>President</i>
EDGAR N. LAYTON	- - - - -	<i>Manager</i>
PAUL E. NOLL	- - - - -	<i>Accompanist</i>

FIRST TENOR

Edward D. Lownes  
 Arthur F. Michael  
 Morris Goldsmith  
 Frank H. Wiegand  
 James M. Carter

SECOND TENOR

W. Larrabee Bangham  
 Loren E. Blakeley  
 Sydney F. Duncan  
 Ernest E. Thor  
 Robert Jaffray  
 Conrad J. Waller

FIRST BASS

Harold L. Albright  
 George B. Stone  
 Douglas Sellers  
 James T. Mercereau  
 Markham E. Salsbury  
 Hoyt F. Martin

SECOND BASS

Edgar N. Layton  
 Oliver W. Kilham  
 Paul Perkins  
 David C. May  
 Emerson D. Bailey

## Band Activities

THE activities of the band have been among the most prominent of those of the student life of the Institute. This has been the first year that the band has been a student body activity; in years previous it was considered only a part of the military organization of the Institute.

During the year, the band has engaged in many varied types of concerts and performances. On November 28, the band gave a special concert at the Pasadena High School Auditorium which was highly commended by those fortunate enough to enjoy it. On New Year's day, the band represented the Institute by participation in the Tournament of Roses parade. The proceeds of the concert and the parade were used to purchase the new band uniforms of white. The band was always to be found at football and baseball games, featuring at the latter "trombone windup" which is a specialty of Tech baseball.

The band marched in the Home Products Week parade which was held in February. Twice the band has entertained the student body at the Friday morning A. S. B. assemblies. Besides all this, the band has its military function, playing at parades and ceremonies.

Grant V. Jenkins has spent much time, as director, working the group into a well rounded, capable organization. Albert S. Gould has been band manager for the past year.

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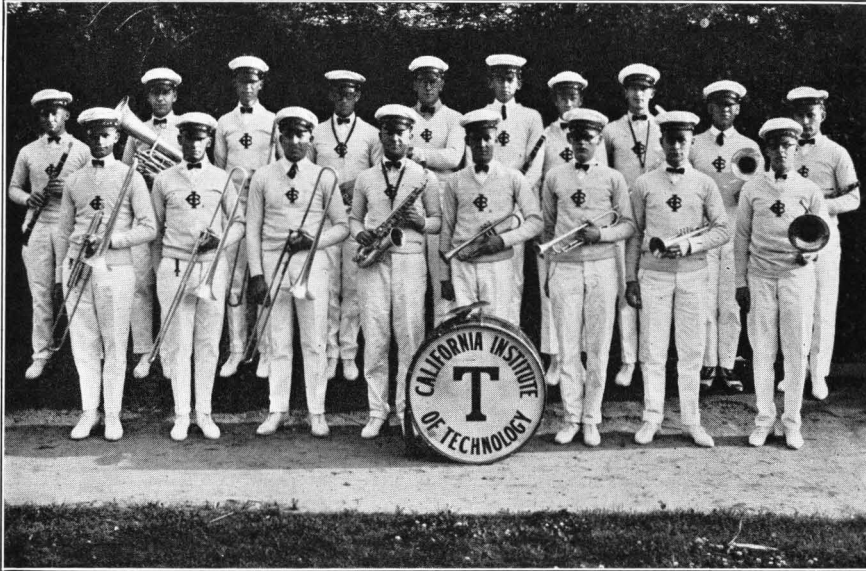
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## ORGANIZATIONS

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### THE BAND

GRANT V. JENKINS	- - - - -	<i>Director</i>
ALBERT S. GOULD	- - - - -	<i>Manager</i>

### MEMBERS

<p style="text-align: center;">CORNETS</p> <p>Hoyt E. Martin          Donald Stone          David C. May          Stuart L. Seymore          Herbert V. Ingersoll          Stuart E. Carrier          Loren E. Blakeley</p> <p style="text-align: center;">CLARINETS</p> <p>Edgar N. Layton          George N. Ramseyer          Horace C. Adams          Harold W. Lord          Dwight A. Degnan</p> <p style="text-align: center;">SAXOPHONES</p> <p>Edward H. Hart          Warren B. Leavitt          Alva C. Hall</p>	<p style="text-align: center;">PICCOLO AND FLUTE</p> <p>Joseph H. Walker</p> <p style="text-align: center;">TROMBONES</p> <p>L. Paul Stoker          Carlton V. Eckermann          Lyall A. Pardee          Joshua E. Youtz          Richard H. Merrill</p> <p style="text-align: center;">BARITONE</p> <p>Albert S. Gould</p> <p style="text-align: center;">BASS</p> <p>Robert O. Stein</p> <p style="text-align: center;">DRUMS</p> <p>Milton Houda          Roy L. Chaffee</p> <p style="text-align: center;">ALTOES</p> <p>John H. Puls          Ben E. Hess</p>
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## Dorm Club

### OFFICERS

DAVID G. HARRIES	- - - - -	<i>President</i>
MORRIS GOLDSMITH	- - - - -	<i>Vice-President</i>
ORVAL E. LIDDELL	- - - - -	<i>Secretary</i>

Harold S. Endicott, Markham E. Salsbury—House Committee.  
Orval E. Liddell, Samuel L. Diack, Frank H. Wiegand—Social Committee.

### MEMBERS

Harold L. Albright	William G. Henderson
Tracy L. Atherton	William J. Hewston
Henry C. Austin	M. Irven Hoffman
Emerson D. Bailey	William L. Holladay
Floyd A. Baker	William S. Kingsbury
Frederic A. Brossy	J. Caryl Krouser
Walter L. Bryant	O. Seymour Larabee
Albert E. Byler	Orval E. Liddell
Eugene E. Cartwright	Edward D. Lowries
Albert Chapman	David C. May
William U. Dent	James E. Moore
Stephen Detzer	Kenneth W. Ranney
Samuel L. Diack	Hubert A. Reeves
Carlton D. Eckermann	Markham E. Salsbury
Harold S. Endicott	K. Fritz Schumacher
Richard G. Erickson	Percival T. W. Scott
Jack Fahs	C. Curtis Spelman
Albert J. Ferkel	Clement B. Stern
William B. Garner	Thomas W. Temple
Morris Goldsmith	Ira E. Triggs
Leslie B. Giebelstein	Harry L. Warren
Boris A. Golikoff	Robie T. Watkins
Howard W. Goodhue	Clarence E. Weinland
Noble Harden	Frank H. Wiegand
David G. Harries	Keith M. Wilson
Earl S. Hayman	William R. Woodruff



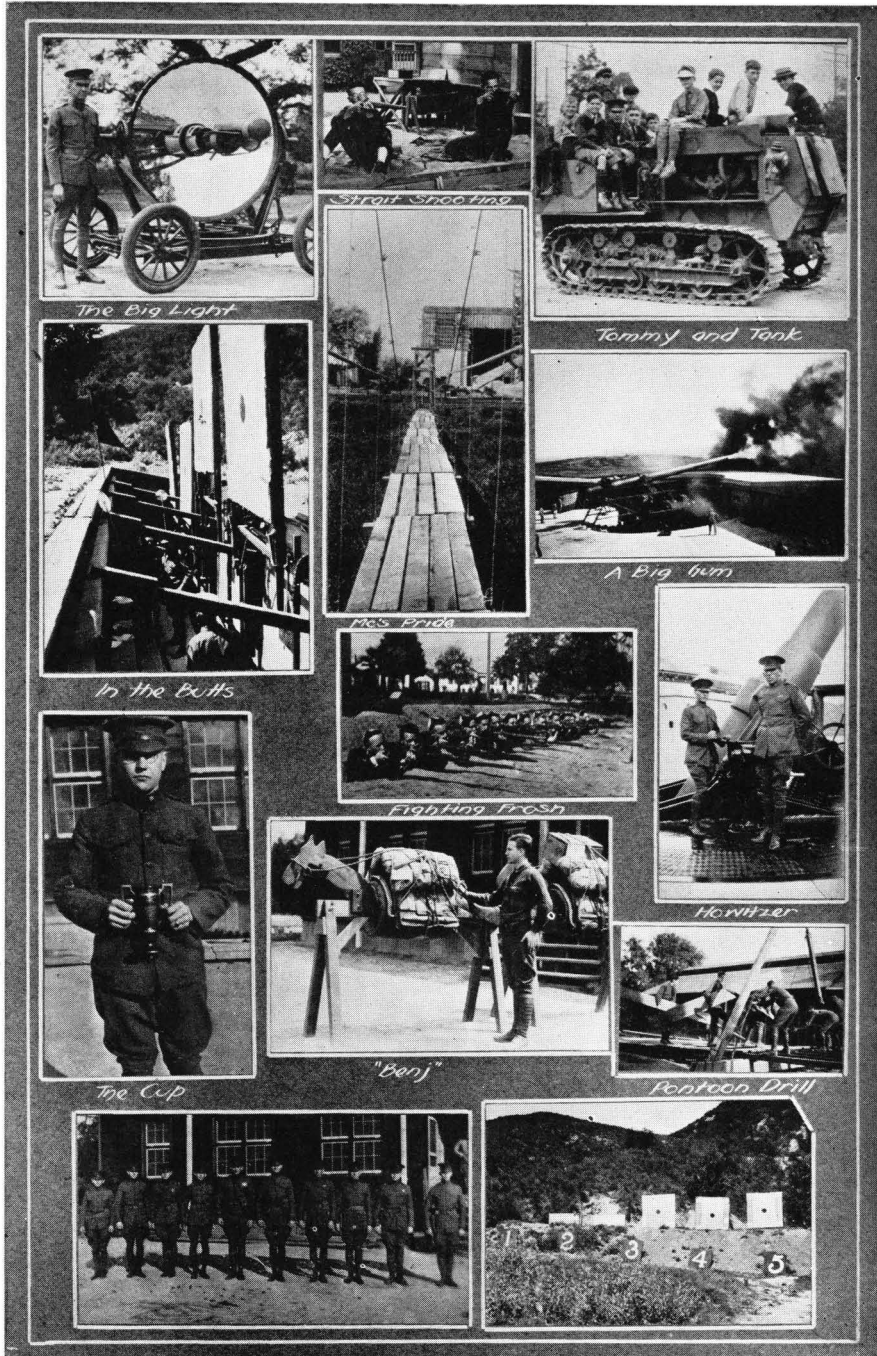
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ORGANIZATIONS

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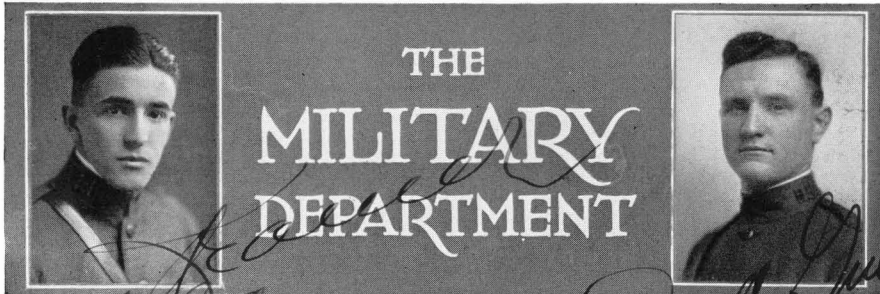
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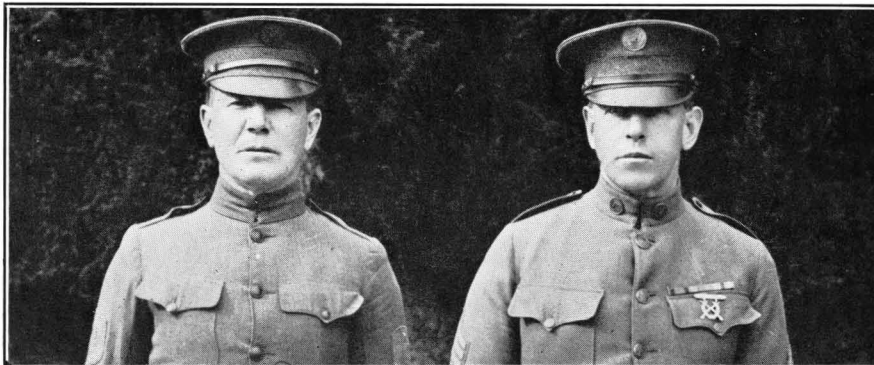
ORGANIZATIONS

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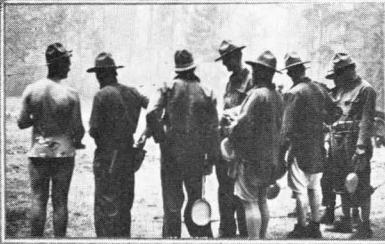


MILITARY STAFF OF INSTRUCTION

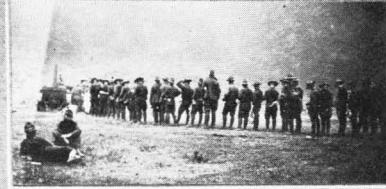
- First Lieutenant HANS KRAMER, C. of E.
- First Lieutenant DOSWELL GULLATT, C. of E.
- WILLIAM C. COOK, Master Sergeant, Retired (resigned Feb. 13, 1923).
- JOSEPH LARACY, Master Sergeant, Retired.
- LOUIS H. BAILEY, Technical Sergeant.



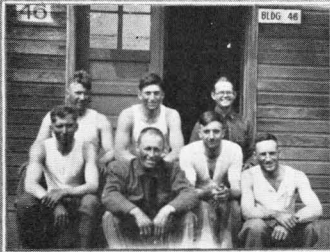
BIG T 1923



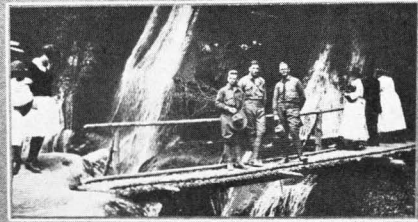
*Dorothy at American Lake*



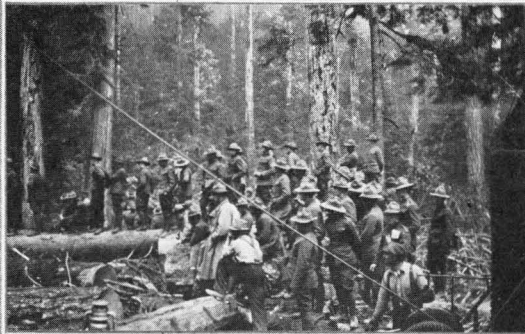
*Chow line in the field*



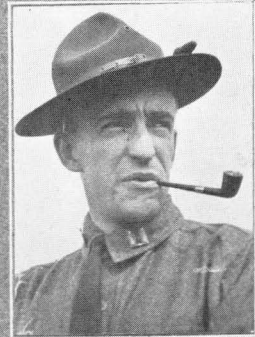
*The Tech Delegation*



*Green River*



*A lumber camp.*



*Hans*



*Ponton loading*

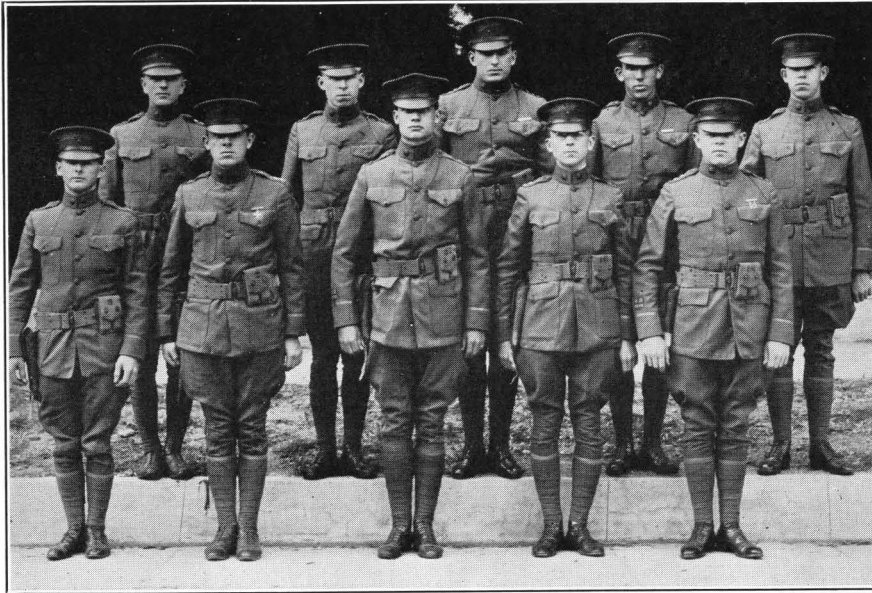


*ROTC Bridge*

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## ORGANIZATIONS

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MAJOR  
McKEE, G. T.

### COMPANY OFFICERS

COMPANY "A"  
Capt. Alcorn, M. B.  
1st Lt. Banks, S. A.  
2nd Lt. Roth, L. P.  
1st Sgt. Groat, F. J.

COMPANY "B"  
Capt. Reeves, H. A.  
1st Lt. McKaig, A.  
2nd Lt. Kendall, D. G.  
1st Sgt. Thayer, E. F.

COMPANY "C"  
Capt. McClung, F. J.  
1st Lt. Owens, C. R.  
2nd Lt. Albright, H. L.  
1st Sgt. Tellwright, L.

### COLOR GUARD

Acting Color Sergeant  
THAYER, E. F.

Color Corporals  
MARTIN, H. J.  
DENT, W. U.

### 1922 SUMMER CAMP

CALIFORNIA TECH was ably represented last year in the Engineer contingent of the summer camp held at Camp Lewis, Washington. The camp singles' and doubles' championship in tennis, a high place in the .30 caliber rifle competition, the providing of editor-in-chief, two department editors and the majority of the staff of the camp annual, "The Sketching Board," and a tie for second place honors on "Regatta Day," were a few of the accomplishments of the eleven Caltech men. They also provided the mainstay of the Engineers' baseball team, which tied with the artillery for the camp championship. It is evident that the handicap suffered by being outnumbered by the other engineering institutions represented was readily overcome.

## Rifle Team Matches

### GALLERY RIFLE TEAM

THE Tech Gallery Rifle Team competed in four matches during the past year. The annual Inter-Company match was won by Company B, which received the cup donated by the Military Department which was previously held by Company C. The cup becomes the property of the company winning it three times.

The Conference Match followed, the scores being: Caltech, 3331; Pomona, 3207; S. B. U. C., 3075. As a result of the meet Tech won the cup given by the military departments of the three colleges which was formerly held by S. B. U. C. In the Ninth Corps Area Match, California Tech made a good showing by placing ninth in a field of twenty-four crack college teams. Tech's score was 5198 points out of a possible 6000. No trophy is awarded in this match, but several of the highest teams are selected to represent the Ninth Corps Area in the National R. O. T. C. match. The first eight teams were picked this year.

It will be seen that the field of competition expanded through the year, matches being held first at home, then with Southern California colleges, and finally with the Ninth Corps Area (Western) colleges, thus completing a creditable year for the team.

### .30 CALIBRE RIFLE TEAM

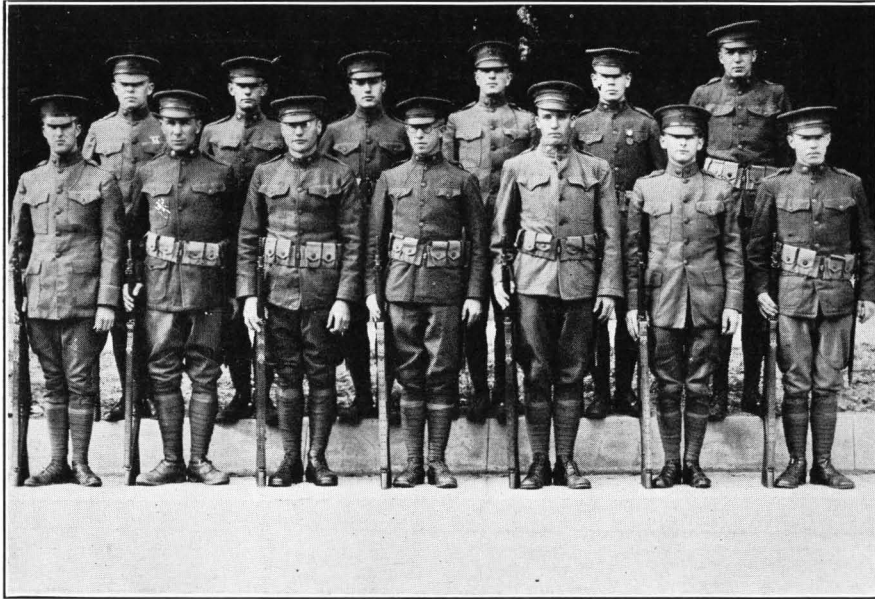
DURING the spring vacation, thirty-three men spent five days in practice and record firing with the .30 calibre rifle and the .45 caliber automatic pistol at the Glendale range of the National Guard. The course prescribed for the regular army was fired. A good showing was made, as evidenced by the fact that ninety-three per cent of the men qualified as marksmen or better. Instruction was also given in the use of the Browning machine gun and the automatic rifle.

The .30 calibre team was formed by fifteen of the men who fired the regular army course. This team used the same scores made in its record firing to compete in a match with the Oregon Agricultural College. O. A. C. made a score of 1151 and Caltech 1198, out of a possible 1500.

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## ORGANIZATIONS

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### TECH RIFLE TEAMS

#### MEMBERS OF GALLERY RIFLE TEAM

Max B. Alcorn  
William H. Allen  
Alvah S. Bull  
John Buxton  
Charles H. Cartwright  
L. Bentley Copeland  
Harold W. Lord  
Frank R. Lovering  
Frederick J. McClung  
Leroy Newcomb  
Clarence R. Owens  
Eugene H. Riggs  
Lawrence P. Roth  
Clair V. Staley  
Ira E. Triggs  
Baker Wingfield

#### MEMBERS OF .30 CALIBRE RIFLE TEAM

James T. Mercereau  
Jack H. Helms  
Charles H. Muir, Jr.  
Clair V. Staley  
Vincent W. Rodgers  
John Buxton  
William H. Allen  
Alvah S. Bull  
Frederick J. McClung  
Joseph Matson, Jr.  
Ira E. Triggs  
Felix O. Fricker  
Harold W. Lord  
Frank R. Lovering  
Carroll O. Nordquist



## Honor Societies

### TAU BETA PI

**T**HE yearly election for the Tau Beta Pi, National Engineering Honorary Society, is an event eagerly looked forward to by those eligible. The eligibility is limited to those whose scholastic records rank among the highest of the Junior Class and the highest quarter of the Senior Class, strong emphasis being placed upon the personality and activities of the candidates.

Besides being a distinct honor in itself, membership is of considerable social and intellectual value. The two outstanding annual events of the Society are two banquets following the formal initiations. They form a gathering of both members and alumni residing in Southern California and give an opportunity for social intercourse with many prominent men in the engineering profession.

The monthly literary meetings are both useful and interesting, original papers are presented and usually followed by discussions, theater parties, luncheons and hikes; also form the social life of the Society and are always very enjoyable affairs.

### PI KAPPA DELTA

**T**HE California Gamma Chapter of Pi Kappa Delta, National Honorary Forensic Society, is at present well established at the Institute. Its aim is to foster and promote forensic activities by conferring the honor of membership and by creating a social bond between the members. Eligibility is limited to participants in intercollegiate forensic contests.

The Society took over practically the entire responsibility of handling forensic programs and has been instrumental in building up strong teams. Debating occupies at present an important place among other college activities and its success is due to the spirit reigning in the Society and to its able leadership.



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## ORGANIZATIONS

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### HONOR KEY SYSTEM

The purpose of the Honor Key System is to encourage students in the giving of their abilities so that all activities may prosper equally. The Student Body provides this stimulus to impartial service by honoring those men who give of their time and energy in proportion to the amount and character of their sacrifice. The Honor Key is the reward given in recognition of unusual service to the Institute.

It is deemed highly desirable that the requirements incident to the winning of a Key be made sufficiently rigorous to prevent too large a number of men from receiving it and thus lowering its value as a recognition of distinguished service. It has been expedient, therefore, to inaugurate a Point system which consists in assigning Points proportionately to all recognized student activities. Under the present management, every man who has served his Alma Mater to the extent of receiving twelve or more Points in one year is presented with an Honor Key.

### PRESS CLUB

The Press Club of the Institute is an organization whose members are selected by the club because of their interest and participation in journalistic work in connection with the several publications of the college. The membership is limited, and the initiates are privileged to write and edit the annual issue of "The Hot Rivet," the razz sheet of the year, in which sarcasm, wit and humor participate in a general riot. Aside from the "Hot Rivet," one of the aims of the club is the raising of the standard of journalistic work on the campus. The meetings are usually the scenes of good times, topped off with interesting informal talks by men of general interest. The tiny gold paragraph sign is the membership mark of distinction.

### VARSITY CLUB

The Varsity Club influences the award of letters and similar insignia and in various other ways directs the athletic policies along lines that are beneficial to the students and the Institute. Finally the honor of membership in the Club presents a stimulus to athletic endeavor.

As an intermediary body between the student government and the Institute administration, the Varsity Club constitutes a very necessary and helpful link in the athletic program. Its influence is consistently being directed to the maintenance of good sportsmanship and healthy relations with the representatives of other institutions.

## Tau Beta Pi

*Founded 1885 at Lehigh University*

*Members of California Beta Chapter*

### FACULTY

Dr. Robert A. Millikan	Dr. Arthur A. Noyes
Prof. Franklin Thomas	Prof. Royal W. Sorenson
Prof. Frederic W. Hinrichs	Prof. W. Howard Clapp
Prof. Robert L. Daugherty	Mr. Clarence V. Elliott

### GRADUATE

Russell M. Otis	Hallan M. Marsh
Jesse W. M. Du Mond	

### CLASS OF 1923

Sydney A. Banks	Harold S. Endicott
Charles E. Fitch	Walton Gilbert
David G. Harries	Basil Hopper
L. Merle Kirkpatrick	Donald H. Loughridge
George T. McKee	H. Todd Nies
Clarence R. Owens	George N. Ramseyer
Robert J. Schonborn	Howard M. Winegarden

### CLASS OF 1924

Martin L. Beeson	Roy O. Elmore
John Carr	Harold O. Springer
David R. Young	

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## ORGANIZATIONS

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SORENSEN HOPPER HINRICHS ELMORE MARSH SPRINGER OWENS  
THOMAS WINEGARDEN ENDICOTT KIRKPATRICK RAMSEYER BANKS  
CLAPP DAUGHERTY BEESON LOUGHRIDGE HARRIES FITCH OTIS  
CARR SCHONBORN DUMOND McKEE GILBERT YOUNG

# Pi Kappa Delta

*Members of California Gamma Chapter*

## FACULTY

Dr. J. R. MacArthur

## GRADUATE

Joseph B. Maier  
Edward Seaver

Lloyd E. Morrison  
W. Farrand Wilson

Francis L. Hopper

## CLASS OF 1924

Harold R. Beck  
Carlton H. Eckermann  
Fred J. Groat  
Donald F. Morrell

Edward D. Cornelison  
Robert W. Fulwider  
Laurence W. Hall  
F. Douglas Tellwright

Edwin F. Thayer

## CLASS OF 1925

A. Preston Collins  
John H. Helms  
John E. Maurer  
Gerald H. McFarlin  
Alfred A. Newton

Ralph Siegfried  
Joseph H. Walker  
Keith M. Wilson  
Allen J. Morrison  
H. Fred Peterson

Harold C. Sheffield

## CLASS OF 1926

Jack Fahs  
Riley L. Gilbert

W. A. Lewis, Jr.  
Richard D. Pomeroy

## PLEDGES

Loren E. Blakeley, '23

Joseph E. Mayer, '24

Oliver B. Scott, '25

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ORGANIZATIONS

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ECKERMANN HELMS MORRISON GROAT  
 SIEGFRIED MORRISON GROAT  
 PETERSON NEWTON  
 THAYER WALKER BECK  
 TELLWRIGHT McFARLIN MORRELL  
 MAUERER SHEFFIELD WILSON

## Press Club

### *M E M B E R S*

#### HONORARY

Prof. George R. MacMinn

Prof. Clinton K. Judy

#### FACULTY

Sinclair Smith

Arthur L. Klein

#### ACTIVE

##### CLASS OF 1923

Max B. Alcorn

Lloyd A. Walling

George T. McKee

George I. Hickey

Loren E. Blakeley

Alva C. Hall

Douglas A. Stromsoe

Lawrence G. South

##### CLASS OF 1924

Oliver B. Garver

Robert S. Ridgway

Alfred A. Newton

Edgar N. Layton

Tracy L. Atherton

##### CLASS OF 1925

Oliver B. Scott

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ORGANIZATIONS

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MCKEE    RIDGWAY    NEWTON    STROMSOE  
 JUDY    SCOTT    LAYTON    GARVER    MCGINN  
 SOUTH    AHERTON    BLAKELEY    ALCORN    HALL    HICKEY

## Varsity Club

### OFFICERS

HAROLD R. PRESTON	-	-	-	-	<i>President</i>
HAROLD R. BECK	-	-	-	-	<i>Vice-President</i>
DOUGLAS A. STROMSOE	-				<i>Secretary-Treasurer</i>

### SENIORS

Hubert A. Reeves	-	-	-	-	Tr. 1, 2, 3, 4, 5
Harold A. Preston	-	-	-	-	B.B. 1, 2, 3, 4
Richard U. Sears	-	-	-	-	S. Tr. 2, 3, 4
Bernard G. Evans	-	-	-	-	FB., S., 2, 3, 4
Joseph R. Alcock	-	-	-	-	B.B., 3, 4
David G. Harries	-	-	-	-	S., 2, 3, 4
Charles S. Howard	-	-	-	-	S. 2, F.B. 4
Forest L. Lynn	-	-	-	-	Tennis 2, 3, 4
Douglas A. Stromsoe	-	-	-	-	FB. 3, 4
L. Dean Fowler	-	-	-	-	Tr. 3, 4
Richard H. Skinner	-	-	-	-	Tennis 4
Lyle Dillon	-	-	-	-	Tennis 4
Douglas G. Kendall	-	-	-	-	Tennis 4
Henry T. Nies	-	-	-	-	Tennis 4
Willard E. Baer	-	-	-	-	Tr. 4
Sydney A. Banks	-	-	-	-	Bask. B. 4

### JUNIORS

Fred J. Groat	-	-	-	-	B.B. 2, 3, F.B., Bask. B. 2
Elmer J. Weitekamp	-	-	-	-	B.B., 2, 3
Hollis W. Moyse	-	-	-	-	F.B., Bask. B., B.B., 2, 3
Oliver B. Garver	-	-	-	-	Bask. Ball, 2
Harold R. Beck	-	-	-	-	F.B., 2, 3
Orval E. Liddell	-	-	-	-	Tr. 2, 3, Yell Leader 3
Morris Goldsmith	-	-	-	-	F.B., 2, 3

### SOPHOMORES

Raymond E. Alderman	-	-	-	-	F.B. 2
Michael C. Brunner	-	-	-	-	F.B. 2
Kenneth B. Cannon	-	-	-	-	F.B. 2
Frank M. Foster	-	-	-	-	F.B. 2
Marcus I. Hoffman	-	-	-	-	Tr. 2
John E. Kinsey	-	-	-	-	F.B. 2
Douglas W. Keech	-	-	-	-	Tr. 2
Stuart L. Seymour	-	-	-	-	F.B. 2
Edgar E. Shafer	-	-	-	-	Bask. B.

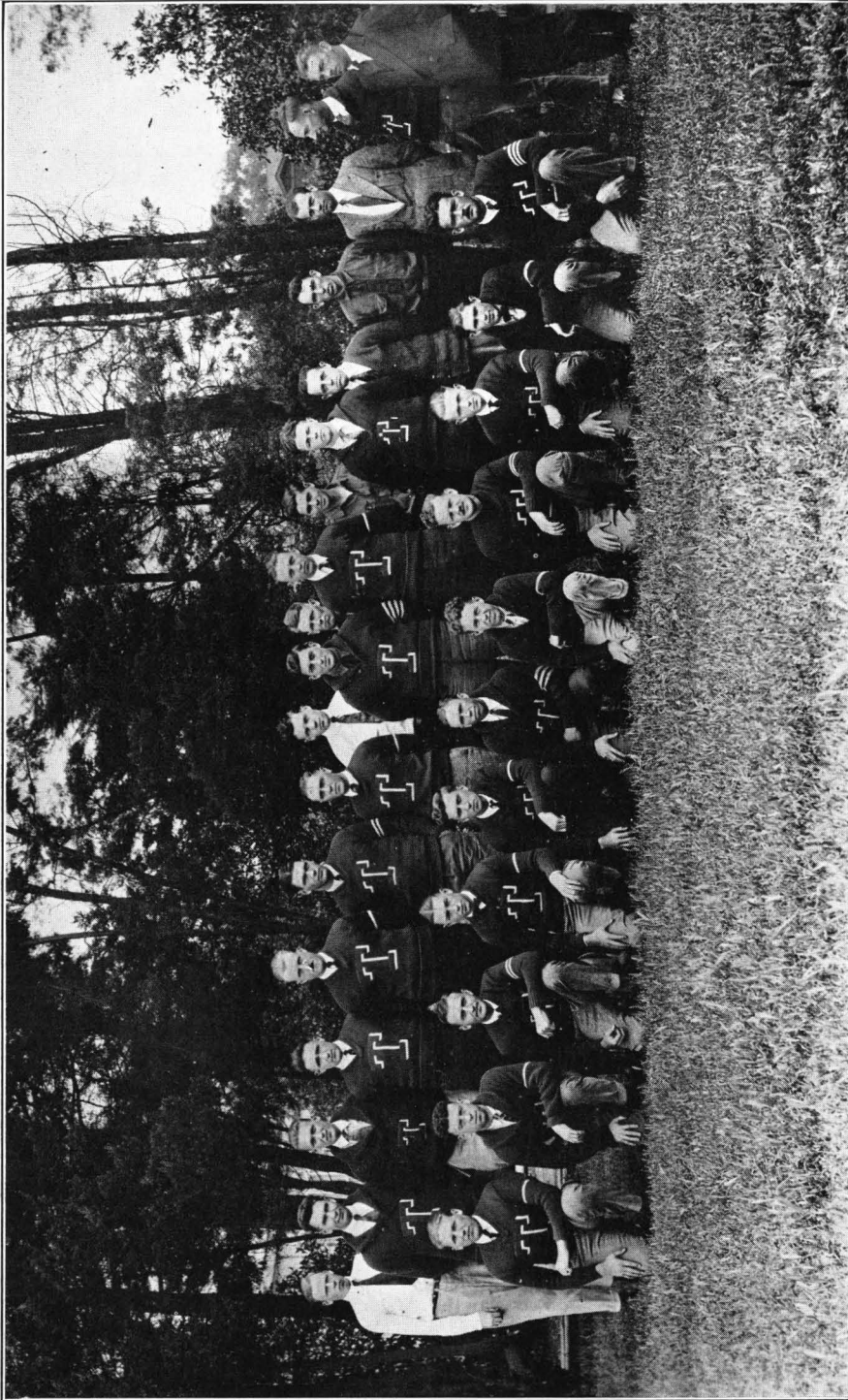
(NOTE—Numbers indicate year letter was won, *i. e.*, B.B. 3, 4, means baseball, junior and senior years).



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ORGANIZATIONS

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## Honor Key Men 1923

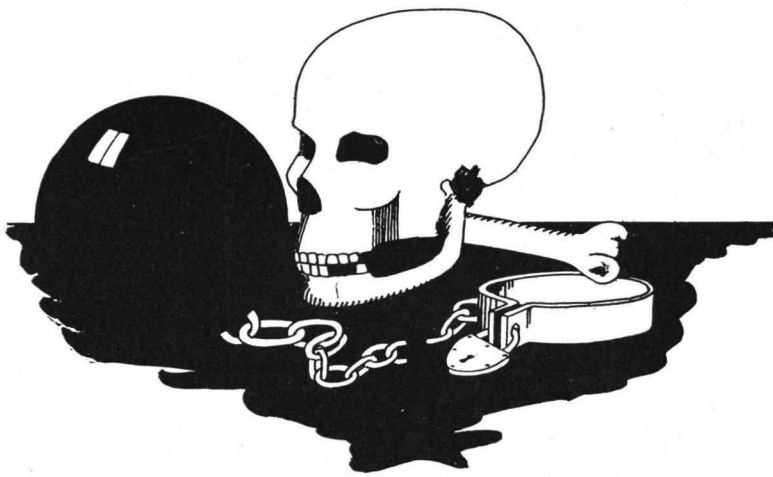
Max Alcorn	- - - - -	6-6
W. L. Bangham	- - - - -	12
Loren E. Blakeley	- - - - -	16
Harold R. Beck	- - - - -	12
C. H. Eckermann	- - - - -	12
Bernard G. Evans	- - - - -	6-11
L. Dean Fowler	- - - - -	13
Fred J. Groat	- - - - -	15
A. C. Hall	- - - - -	12
David G. Harries	- - - - -	12
Marcus I. Hoffman	- - - - -	12
Edgar N. Layton	- - - - -	18
George T. McKee	- - - - -	6-3
Donald F. Morrell	- - - - -	16
Alfred A. Newton	- - - - -	13
Harold Preston	- - - - -	12
M. E. Salsbury	- - - - -	13
Oliver B. Scott	- - - - -	14
Richard H. Skinner	- - - - -	12
Robert Stein	- - - - -	12
F. D. Tellwright	- - - - -	12
C. Perry Walker	- - - - -	13

### HONORABLE MENTION

*8 Points or Over*

Charles S. Howard	Harold Gandy
Grant V. Jenkins	O. B. Garver
Orval Liddell	M. Goldsmith
Gerald McFarlin	Walton Gilbert
Robert E. Pepper	George I. Hickey
Joseph Walker	Douglas Sellers

*Note: This list is complete only up to the time of publication.*



# FRATS

# Gnome Club

*(Kappa Gamma)*

*Founded 1897*

House: 289 South Madison Avenue

## M E M B E R S

### FACULTY

Mr. Edward C. Barrett	Prof. Romeo R. Martel
Dr. Stuart J. Bates	Mr. Russell M. Otis
Prof. W. Howard Clapp	Mr. Walter W. Ogier, Jr.
Prof. Robert L. Daugherty	Prof. Paul Perigord
Prof. Lucian H. Gilmore	Prof. R. W. Sorensen
Prof. Clinton K. Judy	Prof. Harry C. Van Buskirk

### CLASS OF 1923

Paul M. White	Richard U. Seares
George I. Hickey	George T. McKee

### CLASS OF 1924

Harold R. Beck	Fred J. Groat
Martin L. Beeson	Donald F. Morrell

### CLASS OF 1925

Lawrence P. Henderson	H. Fred Peterson
Hoyt F. Martin	Markham E. Salsbury
Gerald H. McFarlin	Oliver B. Scott
Allen J. Morrison, Jr.	Harold C. Sheffield
Alfred A. Newton	Howard S. Tackabury

### CLASS OF 1926

Riley L. Gilbert	Robert O. Stein
Wallace C. Penfield	

### PLEDGES

Marcus I. Hoffman, Jr. '25	Theodore C. Coleman '26
Arthur C. Werden, Jr. '26	

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ORGANIZATIONS

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PENFIELD SCOTT SALSBURY STEIN NEWTON GILBERT  
 HICKEY HOFFMAN WERDEN COLEMAN PETERSON TACKABURY  
 MARTIN MORRISON HENDERSON SEARES MCFARLIN MCKEE  
 BEESON BECK GROAT WHITE GILBERT MORRELL SHEFFIELD

# Sigma Alpha Pi

*Founded 1914*

House: 399 South Mentor Avenue

## M E M B E R S

### FACULTY

Prof. Franklin Thomas	Capt. Hans Kramer
Prof. George R. MacMinn	Dr. William N. Lacey
Prof. Graham A. Laing	

### CLASS OF 1923

Richmond H. Skinner	Harold R. Preston
C. Perry Walker	Charles S. Howard
Bernard G. Evans	David G. Harries
Douglas A. Stromsoe	

### CLASS OF 1924

Orval E. Liddell	Earl S. Hayman
Roy O. Elmore	Hollis W. Moyse
Oliver B. Garver	

### CLASS OF 1925

Robie T. Watkins	Douglas W. Keech
Raymond E. Alderman	John E. Maurer
Frank M. Foster	Michael C. Brunner
Bruce H. Mills	John E. Kinsey
R. Russell Boorey	Ralph Siegfried
Glenn M. Schlegel	Kenneth B. Cannon
Albert J. Ferkel	

### CLASS OF 1926

W. Kenneth Kemp	George S. Stewart
Jack C. Baker	Horton C. Williams
W. Stuart Johnson	Le Roy Dixon

# ORGANIZATIONS



DIXON  
 WILLIAMS  
 PRESTON  
 BAKER  
 HOWARD  
 HAYMAN  
 FERKEL  
 MAURER  
 HARRIES  
 ELMORE  
 LIDDELL  
 MILLS  
 STROMISOE  
 EVANS  
 WATKINS  
 FOSTER  
 GARVER  
 MOYSE  
 JOHNSON  
 STEWART  
 CANNON  
 ALDERMAN  
 BRUNNER  
 STEWART  
 WALKER  
 SIEGFRIED

Pharos  
(Phi Alpha Rho)  
Founded 1921

House: 59 South Wilson Avenue

M E M B E R S

FACULTY

Dr. Arthur A. Noyes  
Prof. E. Charles Watson  
Mr. Arthur F. Clement  
Dr. Clyde Wolfe  
Mr. Ernest H. Swift

CLASS OF 1923

L. Merle Kirkpatrick  
Alva C. Hall  
George N. Ramseyer  
Hubert K. Woods  
Donald H. Loughridge  
L. Dean Fowler  
Stanley T. Schofield  
Basil Hopper  
George C. Kuffel  
Charles A. Storms

CLASS OF 1924

Kenneth C. McCarter  
L. Paul Stoker  
F. Douglas Tellwright  
Clifford W. Maltby  
Kenneth B. Anderson  
Harold F. Pope  
Albert S. Gould  
Grant V. Jenkins  
D. Arnold Blackburn

CLASS OF 1925

L. Bentley Copeland  
Allen L. Laws  
Ben E. Hess  
George L. Garver  
Carl F. Beed  
James H. Smith  
James E. Moore  
Orrin H. Barnes  
Earl R. Peterson  
Sterling W. Beed  
Donald S. Stone

CLASS OF 1926

Roger B. S. Bryan  
Meridan H. Bennett  
Robert C. Bawbell



ORGANIZATIONS



McCARTER    HESS    BAWBELL    MOORE    BLACKBURN    LOUGHRIDGE  
 PETERSON    HOPPER    POPE    KUFFEL    SCHOFIELD    COPELAND  
                   STOKER    HALL    KIRKPATRICK    BARNES    BEED  
 BRYAN        ANDERSON    GOULD    STORMS    FOWLER    RAMSEYER    LAWS

*Clifford Malting*

*Robt. Bawbell*

# Pi Alpha Tau

*Founded 1921*

## M E M B E R S

### FACULTY

Mr. Robert B. Brode                      Mr. Fred J. Converse  
Dr. Walter T. Whitney

### CLASS OF 1924

Floyd A. Baker	William S. Kingsbury, Jr.
Edgar M. DeRemer	Edgar N. Layton
C. Leonard Forbes	Edward D. Lownes
Morris Goldsmith	Arthur F. Michael
Loys Griswold	Douglas Sellers
William L. Holladay	Willis L. Squiers
Oliver W. Kilham	Harry L. Warren

### CLASS OF 1925

Charles C. Andren                      Leo M. Miller  
Paul E. Noll

### CLASS OF 1926

Ralph A. Freeman                      George R. Kaye

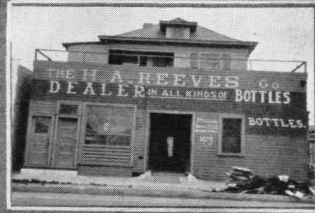
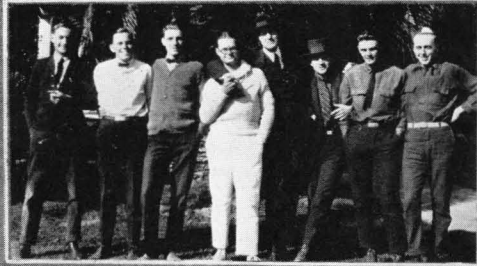
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ORGANIZATIONS

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NOLL  
 MILLER  
 HOLLADAY  
 KINGSBURY  
 FREEMAN  
 KILHAM  
 GRISWOLD  
 MICHAEL  
 SELLERS  
 KAYE  
 LAYTON  
 BAKER  
 FOREBS  
 ANDREN  
 LOWNES  
 SOWERS  
 GOLDSMITH  
 WARREN  
 DE REMER



*Looffbourn*



*The Frosh Flog*



*"Luffy"*



*"Timmyache"*



*Bandmaster*



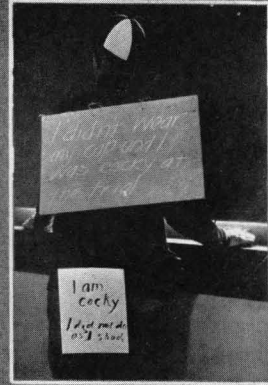
*Scotty's Slim*



*Rasslers*



*Pharos at play*



*The "Stocks"*



*The bally Hergrishman*



*"Scotty"*



*In the Ark*

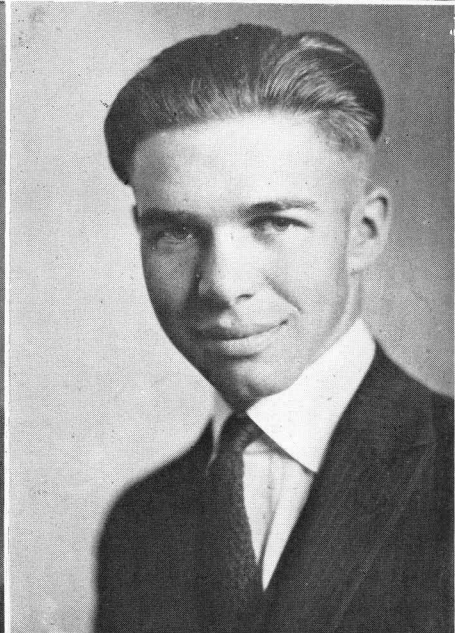


# ATHLETICS

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COACHES

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STANTON  
SKINNER

MUSSELMAN  
RAMSEYER

## Coaches

INTER-COLLEGIATE athletics prosper and accomplish their true purpose only when conducted in a clean, above-board, sportsmanlike manner. Athletics promoted under any other standards can never hope to function as they should, and enjoy a totally healthy condition. The Institute is particularly fortunate in having at the head of its coaching staff a man whose very personality radiates these qualities, a man who loves to win, and a man who strives to win, but never at the sacrifice of fair play and good sportsmanship.

Coach W. L. (Fox) Stanton is one of California's pioneer football mentors. Years ago he played football with Dickinson college, where he was a star of great brilliance. Coming to Southern California about 1910, he became Director of Athletics at Pomona College, producing during his stay there many championship elevens. Later he took charge of athletics at Occidental, where he turned out several scrappy elevens, among them the team which defeated California in 1916.

He took charge of athletics here at California Tech two years ago, and since that time he has done a great deal toward putting Tech on the athletic map. He is a firm believer in the doctrine that first a man must play the game for the love of it, and that after all athletics are entered into for the fun and the good that may be derived from them rather than a cold sure-win proposition. Coach Stanton stresses fundamentals perhaps more than the average coach, building from the ground up, and feeling that no man can be successful in athletics without a thorough knowledge of the particular game in which he is interested. Football, cross-country, and track fall within Coach Stanton's province.

Another man to whom the Institute is greatly indebted for its recent athletic progress is Coach Harold Z. Musselman. Coming to Tech last year, he proved his worth immediately when he turned out one of the most successful baseball teams Tech had ever put into the field. He is a graduate of Cornell College, Iowa, where he was a letterman in the four major sports. During 1920-1921 he directed the athletics of the Sterling (Illinois) High School. He coached freshman football, varsity basketball, and varsity baseball this year.

Joe Larson, Dick Skinner, and George Ramseyer, student coaches, complete the coaching staff. Larson coached freshman basketball this season and developed an abundance of promising varsity material. Skinner, coaching freshman and varsity swimming as well as tennis has worked hard throughout the year. The records of the swimming team this season are worthy tributes to both his ability and his effort. Let it suffice to say that George Ramseyer this season turned out by far the best freshman baseball squad Tech has ever boasted. He is a hard worker, and has all of those qualities which go to make up an excellent baseball coach.



## Yells

C. I. T. rah! rah!  
C. I. T. rah! rah!  
Hoo-rah, hoo-rah,  
California Tech, Rah!

✻ ✻

California Tech,  
California Tech,  
C-A-L-I-F-O-R-N-I-A  
Tech! Tech! Tech

✻ ✻

Oooo woo-woo,  
Oww wow-wow,  
C-A-L-I-F-O-R-N-I-A T-E-C-H  
TECH!

✻ ✻

Get 'em Beavers!  
Get 'em Beavers!  
Tear 'em! Scratch 'em! Mash 'em!  
Bite 'em!  
Go get 'em Beavers!

Kisskazee, Kisskazahoo!  
Hackawee, Hackawahoo!  
Siyi! Kiyi, California iyi,  
Siyee, Kiyee, Teka-Teka-Tee-Tee,  
Kisskazee, Kisskazahoo!  
Teka Tee, Teka-Tahoo!  
ooooOoooo! Yow!

✻ ✻

B-E-A-V-E-R-S,  
B-E-A-V-E-R-S,  
B-E-A-V-E-R-S, (faster)  
California Tech Beavers!

✻ ✻

Motors, Bridges, Beveled Gears  
C. I. T. Engineers,  
(Repeat three times)  
(whistle) Boom! Ah,  
Tech! Rah!



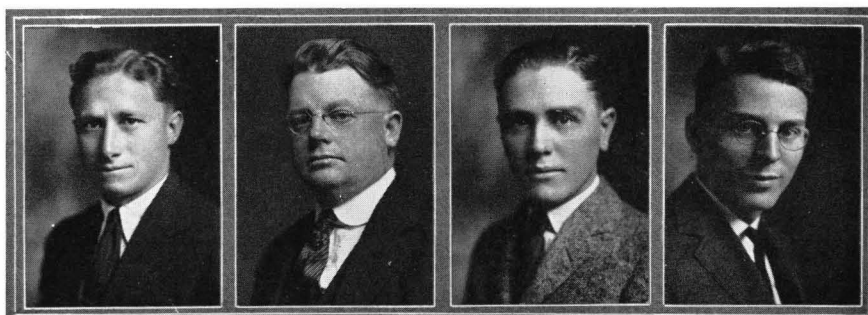
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## ATHLETICS

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WALKER

SORENSEN

HOWARD

MORRELL

### PROFESSOR SORENSON

The prosperity and growth of interest in inter-collegiate athletics at California Tech may be largely attributed to the efforts of one of the faculty, Professor Sorenson. He has given unselfishly of his time to all of the problems involved in inter-collegiate competition at the Institute, and in all that time no more ardent fan has ever graced the bleachers than he. He is not only interested in athletics within the Institute, but is also chairman of the Southern California Intercollegiate Conference.

### CHARLES HOWARD

With Charles Howard as Athletic Manager, California Tech has just finished the most successful athletic year of its history, not only athletically but also financially. His heart and soul have been in the work throughout the year, and the Student Body may indeed consider itself fortunate in having had such a man as Howard at the athletic helm during the year just past.

### PERRY WALKER

As football and track manager, Perry Walker indeed made good this year. Neither one of these positions carry with them anything like the glory they should, but Perry is deserving of all the credit in the world for the efficient and thorough manner with which he handled the teams. Probably no Tech teams have ever boasted a more popular manager.

### DON MORRELL

Don Morrell handled the managerial duties involved during the basketball and baseball seasons. Don has worked hard and efficiently, being above all a man who has had the interests of the teams at heart throughout their respective schedules. A popular boss, and an efficient one, Morrell is a man in whom the Student Body may safely vest the duties of next year's Athletic Manager.

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BIG T 1923

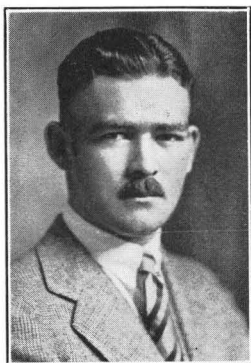
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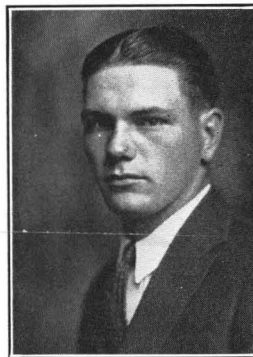
SMITH ALDERMAN SEYMOUR GROAT BRUNNER  
SELLERS FOSTER HOWARD CANNON KINSEY WALKER  
GOLDSMITH MOYSE EVANS BECK STROMSOE

ATHLETICS

FOOTBALL



CAPTAIN EVANS



CAPTAIN-ELECT MOYSE

Opposing Team	Score Tech Opp.	Place	Tech Scores	Converted by	Remarks
U. S. S. California.....	6 19	Tournament Park	Bucked over by.....	Larabee	Kinsey made 40 yards on intercepted pass.
U. S. S. Texas.....	19 7	Tournament Park	.....	.....	.....
Whittier.....	9 6	Tournament Park	Drop kick by.....	Groat, Pass Groat to Goldsmith	Whittier expected a good work-out. She got it.
Pomona.....	6 47	Pomona	Pass Groat to.....	Goldsmith	None
Sherman Indians.....	0 6	Tournament Park	.....	.....	Adams fractured leg
Redlands.....	9 0	Redlands	Drop kick by.....	Sellers, Pass Groat to Alderman	3 first downs made by pass Groat to Alderman
Oxy.....	13 19	Tournament Park	On side kick Groat to Cannon. Bucked over by Kinsey.	Groat	The "Fox" outwitted the "Timber Wolf" again
S. B. U. C.....	7 6	S. B. U. C.	Pass, Groat to Moyse	Sellers	Score made possible by 25 yard pass Groat to Helms

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## B I G T 1 9 2 3

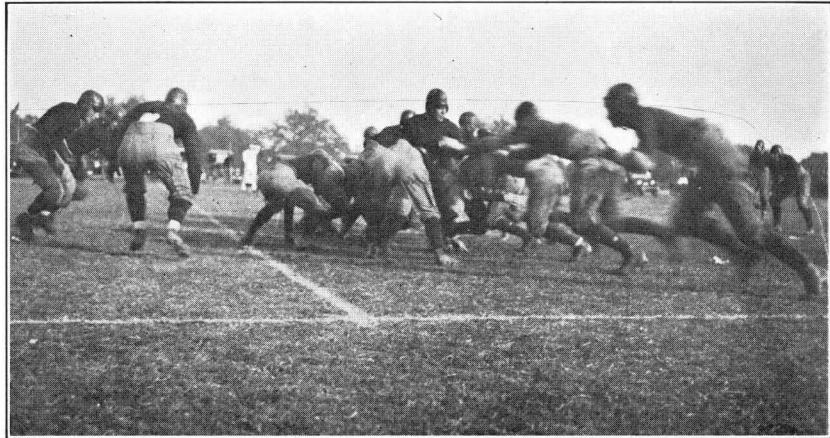
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### WHITTIER GAME

The fighting Engineers upset all dope in the first Conference game by trouncing Whittier College pigskin artists by a score of 9 to 6 on the Tournament Park gridiron. The affair proved to be the greatest dope "upsetter" that was ever played. Coach Parry's team had copped the football title last year, and with the entire team back this year, the mighty wise ones predicted a decided victory for the Quakers.

The game was full of fight and football skill from start to finish. Goldsmith played a stellar game for the Beavers. His passing was a strong feature of the fracas. Kinsey proved himself to be a human bullet when it came to plowing through the Quakers' line. Groat played high class football every



TECH VS. OXY

minute of the game. In the first period he scored a neat drop kick. The second score for Tech came in the second period, when a pass from Groat to Goldsmith put the ball over the line.

The Whittier team put all they had into the game; but showed some indications of over-confidence. The Poets tried in vain to open up an aerial attack but could do nothing in that line with the Engineers' defense. The Poets' lone score came in the third period when the famous Sugget of last year broke loose for a forty-yard run, scoring a touchdown. The extra point was not gained.

The third quarter saw the ball in the Poets' territory all the time. In the last few minutes of the game the Beavers started for another touchdown, but the final whistle blew an instant too soon for another score.

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## ATHLETICS

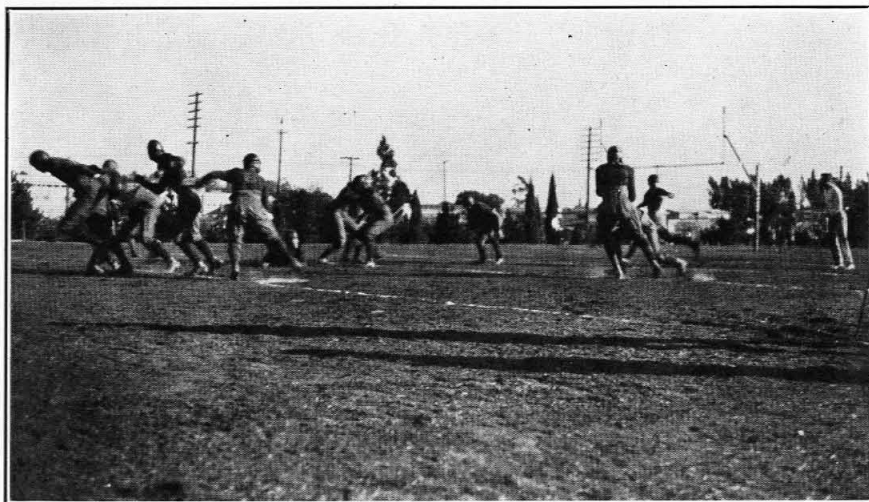
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### POMONA GAME

The second Conference game was staged at Pomona College. With the victory of the Whittier game still fresh in mind, the Engineers went on the field with every thought of winning over the Sagehens. However, the Beavers were completely outclassed when they had to compete with the stellar work of Wilson and Clark, two of the best all around football men in the Conference. The score board read 46 to 6 at the end of the slaughter.

Fred Groat was the star for the Beavers. His punting was all that saved Tech from being totally outplayed. He could always be depended upon to punt to safety. Kinsey bucked through the Sagehen's line now and then for small gains, but could do nothing against the Claremonters' speed. Tackling and poor passing were two things that helped the Engineers lose the game.



TECH VS. S. B. U. C.

Along with Clark and Wilson is placed the name of Doughty. This man ushered the pill over the line twice in the first quarter for the Sagehens. His work on defense was excellent.

The Engineers managed to score in the last quarter. By a series of short passes and line bucks the pigskin was worked to the Sagehen's 5-yard line. A pretty pass from Groat to Goldsmith put the ball over the line.

### OXY GAME

With two victories and one defeat scored up for them, the Beavers had every hope of defeating the Oxy Tigers. These hopes were certainly carried out when it came to football skill and fight, but the Engineers failed when it came to holding onto the pill at crucial moments. The score board read Oxy 19, Caltech 13 at the end of the fracas.

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## B I G T 1 9 2 3

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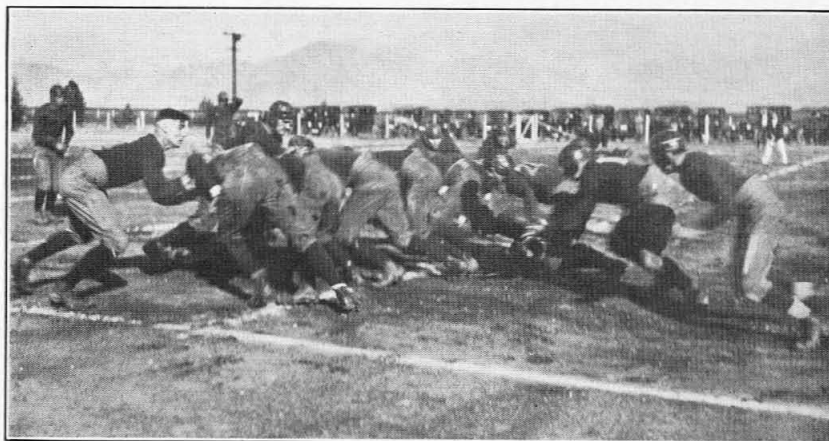
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The games were probably the best played games of the season, from the standpoint of interest. It looked like either team's victory until the final whistle blew. If the game had lasted two minutes longer Caltech might have claimed the victory, as the ball was headed right for an Engineer touchdown when the whistle blew.

### REDLANDS GAME

With the sting of defeat of the Pomona game still burning, Coach Stanton's men traveled to Redlands, and defeated the Bulldogs by a decisive score of 9 to 0 in the third Conference affair.

The Engineers showed real class in every part of the fracas. The team work was the best seen so far in the season. The Beavers' backfield pounded the Redlands line to pieces, and the Engineers' aerial work was far superior to that of the Bulldogs.

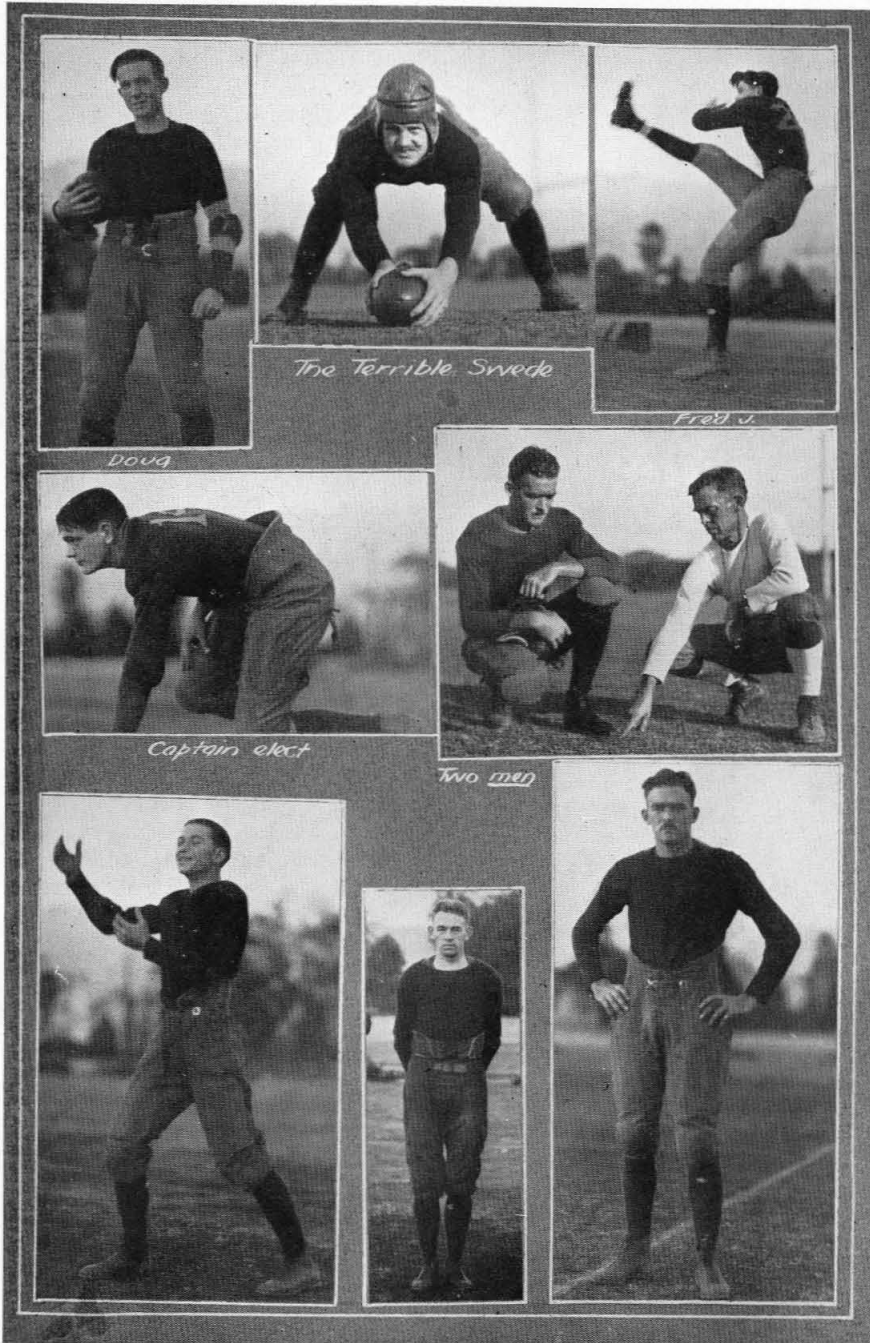


TECH VS. REDLANDS

Allen proved to be the big noise for the Bulldogs. His work was very good throughout the entire fracas. He was all that saved the Beavers from running themselves to death. His head work and ability to play the game was enough to make his worthy of praise.

Sellers made the first score for Caltech in the first period. His educated toe sent the pigskin clearly through the goal posts for three markers. The touchdown came in the final quarter, when the pill had been worked to the Bulldogs' 25-yard line by a bunch of passes and short end runs. A pass to Alderman put the ball over the line.

ATHLETICS



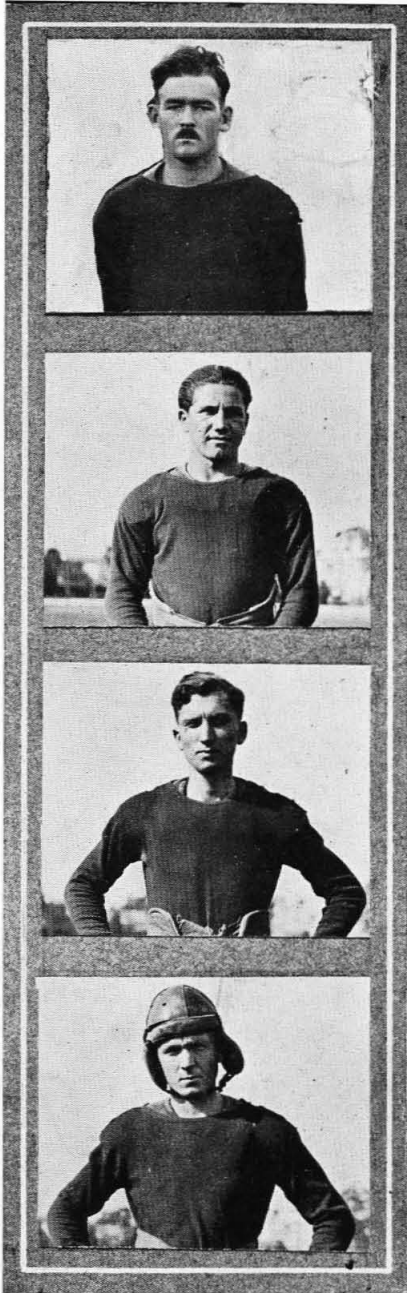
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## BIG T 1923

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CAPT. BERNARD G. EVANS: "Bernie" Evans was the only three-striper on this year's Varsity. Captaining the team and playing the right guard position, he played wonderful football throughout the season. His play on offense was of the highest order, and his ability to size up plays made him an invaluable defensive player. Not only was "Bernie" a wonderful player, but also a wonderful captain; a man in whom every member of this year's team had the utmost confidence. He graduates this year.

MORRIS GOLDSMITH: "Morry," playing his second year of Varsity football, was seen in both the quarterback and halfback positions. Playing equally well in both berths, he was one of the mainstays of this year's backfield. His uncanny ability on the receiving end of the forward pass made him an absolutely necessary cog in Stanton's aerial attack. He will return next year for his last season of college football.

MICHAEL BRUNNER: "Mike" Brunner, playing his first year of Varsity football, handled an end position in the manner of a veteran. He played tackle for the freshmen last season, but his showing at end this year for the Varsity was vastly superior to his showing with the freshman squad. Defensively Mike is there with the goods, and he will be a valuable asset to next year's team.

DOUGLAS SELLERS: "Doug's" educated toe saved the day for Tech on more than one instance. His temperamental nature prevented him reaching his greatest success during the season but with another chance he should prove a regular.



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## ATHLETICS

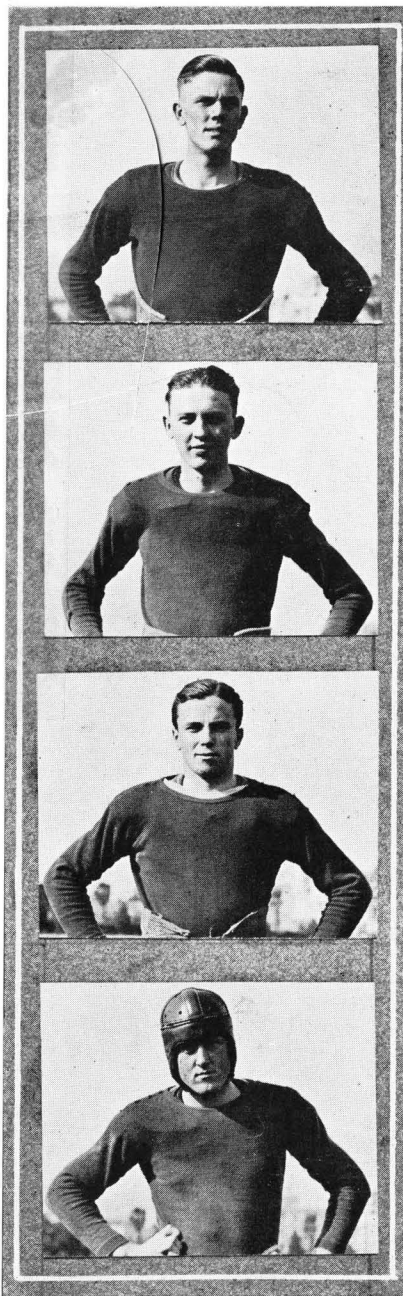
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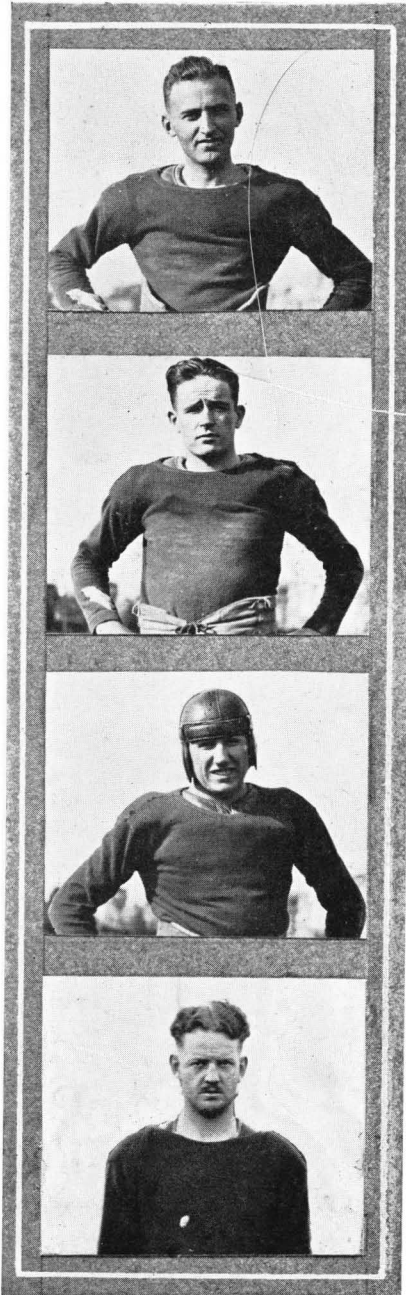
**FRED GROAT:** Fred called signals on this year's Varsity and handled the team in a masterful fashion throughout the season. He was one of a few of the South's last year's quarterbacks feared because of their triple threat. His passing, punting, and ability to carry the ball for substantial yardage made him an invaluable man. He will be back next season.

**STUART L. SEYMOUR:** "Stew," playing his first year of Varsity football, played an excellent game at one of the guard positions. After playing in three games, an attack of mumps kept him out of the game for the rest of the season. He will be back next year, and barring mumps or other unforeseen contingencies should be a valuable man.

**KENNETH CANNON:** Few will forget the onside kick that meant a score in the Oxy game with "Kenny" Cannon the man to carry it over. This is Kenny's first year on the Varsity, but luckily it is not his last, for he is only a Sophomore, and has two seasons ahead of him. He played half this year, and was not only the fastest man on the team, but also by far the most consistent ground gainer.

**RAYMOND ALDERMAN:** "Horsey" played end on last year's freshman team, but because of his weight coupled with his speed, was shifted to a tackle berth this season. He is one of the several Sophomores who played on this year's team, and if he performs in the two seasons before him as he did in his first Varsity season, he will develop into a tackle that will be hard to beat.





DOUGLAS A. STROMSOE: Playing his second year on the Varsity, "Doug" played an excellent game at end throughout the season. Although the lightest man on the team, he more than made up for this handicap by the wonderful brand of fight he displayed. He will be missed next fall.

EUGENE W. SMITH: "Tooley" Smith was a new man on this year's Varsity, but made up in fight what he might have lacked in experience. He was injured early in the season, and unable to play in several mid-season affairs, but got back into the fray in time to put up a wonderful brand of ball in the S. B. U. C. game. He will return in the fall and should star in one of the guard positions.

ED KINSEY: Ed Kinsey, playing fullback this year, failed to really find himself until the final game of the season, the S. B. U. C. affair. In this game, he was here, there, and everywhere, plugging up holes, smearing passes, and backing up plays, displaying an especially fine brand of ball in the defensive department. Ed is a Sophomore, and will be on hand next season.

HAROLD BECK: "Hal" has for two seasons played Varsity football in probably the most difficult berth on the team, the center position. Beck played a hard driving game on offense, and his defensive play overshadowed that of any of the other Conference centers. He will be back next fall and should enjoy the best season of his career.

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## ATHLETICS

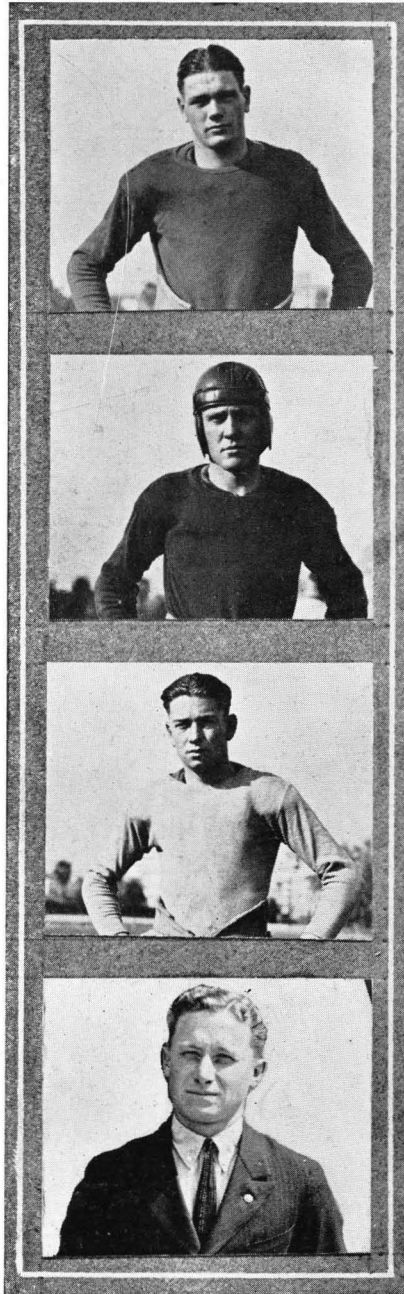
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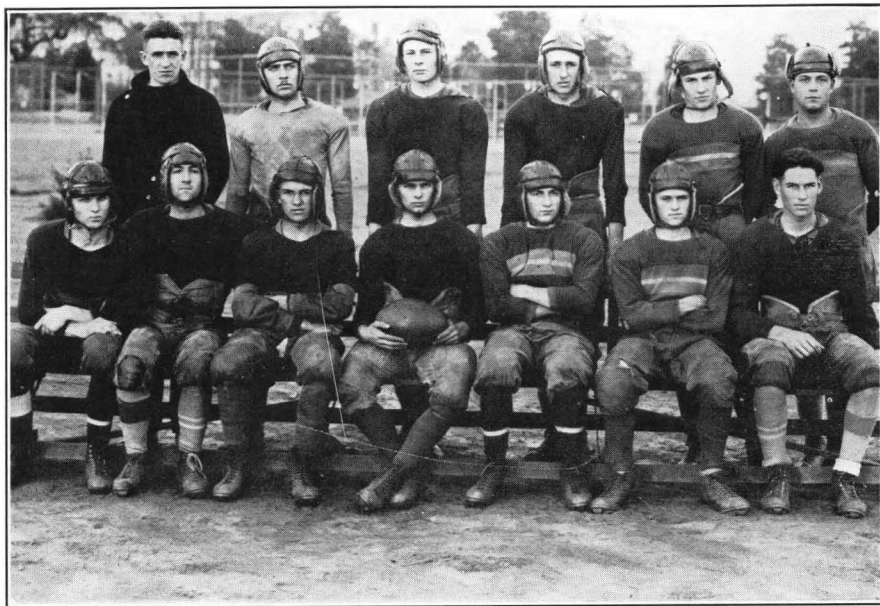
CAPTAIN ELECT HOLLIS MOYSE: "Holly" played his second year at a Varsity tackle berth this season, and handled the job in unapproachable fashion. Defensively he was probably second to no other tackle in the Conference, and the same goes for his play on offense. He has been chosen to captain next year's eleven and no better fitted man could possibly have been selected for this position.

CHARLES HOWARD: "Chuck" reaped the rewards of hard work this year by making the Varsity after two years on the scrubs. He started the season in the backfield, but was later shifted to center, and finally to guard, where he played an excellent brand of ball on both defense and offense during the final games. Chuck is lost to the team by graduation.

FRANK FOSTER: "Stupe," playing Varsity half this season, donned football togs for the first time last September. He developed with unbelievable rapidity, and during the final weeks of the season was a triple threat man to be wholesomely feared by any team. His passing was par excellence, and his punting ability far above average. These two factors, coupled with his speed and defensive play will make him a valuable back next season.

PERRY WALKER: "Jack" has been one of Tech's most successful and well liked managers. Always on the job and willing to work he played a major part in the success of the season.





## SCRUBS

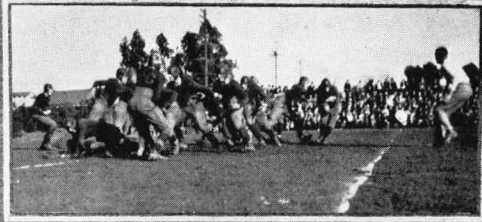
THE turnout of inexperienced men for the scrub team was unusually large this year. In contrast to previous seasons, there was always plenty of material to provide a "Roman Holiday" for the varsity. The men on the scrub team used their mental capacities to good effect by learning an entirely new set of signals each week. The dramatic abilities of various individuals were developed by impersonating various celebrated personages such as Suggett; Daggs; Cory, and White.

Much of the success of the scrubs was due to the untiring efforts and enthusiasm of Hans Kramer, who devoted all of his spare time to the development of the outfit. Kramer's experience at Michigan and West Point made his services invaluable to the Institute.

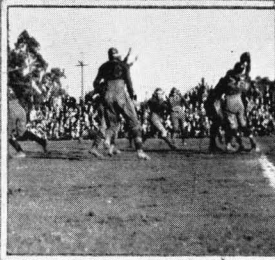
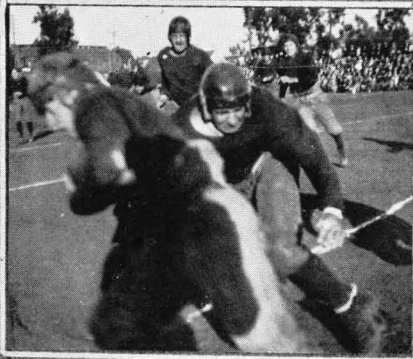
The spirit shown by the men of the team exemplifies in the best way, the true spirit of a Tech man. The persistent manner in which they took their regular drubbings from the varsity, often by moonlight, was only another example of their unceasing loyalty.

The ultimate success of the season in the final analysis rests upon the manner in which the scrub fulfills its duty. This year this has been evidenced to a greater extent than in past seasons. The varsity of coming years will be composed largely of these men who have so painfully learned the rudiments of the game.

ATHLETICS



*S.B.U.C.*



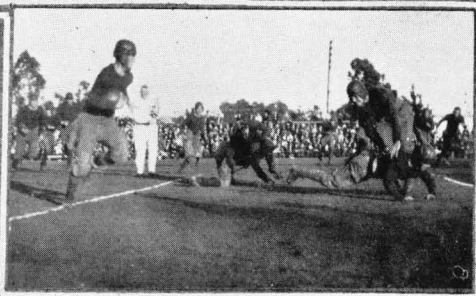
*Fighting for the ball*



*Behind the line*



*Manager*



*Moury tries to tackle*

## Freshmen Football

FRESHMAN football at Tech this year has been a distinct success. It attained its one big purpose, the development of material to take places on next year's varsity team. The scrimmage offered by the freshmen was a large factor in the development of our varsity team.

The frosh had two practice games, one with the La Verne College, and the other with the Oneonta Park Military Academy. The former game was lost 27-0, and the latter won by a score of 27-7. The team had not yet found themselves in the La Verne game, and fumbles at critical points in the game helped lose it. The Military academy game was almost exactly opposite to this one, in that Tech's opponents were on the fumbling end of the game.

The first Frosh conference game found Tech playing their worst game of the season. Captain Baker was out with an infected foot, and the Sagehens bewildered the Tech peagreeners so badly that almost every end run went for ten or more yards. The final score was 43-7. Fricker, playing fullback played a powerful game, stopping easily half of the plays.

The frosh proved their mettle in the Oxy game, and made up for all their deficiencies in previous games, by holding the strong Oxy team to a 6-0 score. Oxy later defeated the Pomona frosh team. Oxy had previously defeated many of the best high school teams in the state, and expected an easy game with Tech. The first half of the game found neither side able to score. Oxy was able to gain only spasmodically against Tech's much lighter line. Harrington, at tackle, played like a demon in this game. "Bob" Stein showed worlds of fight by playing the whole game on an ankle that was so weak he could hardly stand.

Oxy was able to push a touchdown across in the third quarter, which was their margin of victory, for after that Tech would not allow them to gain an inch, and on more than one occasion the Beavers were within scoring distance, only to be turned back.

The men receiving numerals were: Baker (captain), fullback; Kemp, Copeland, quarterbacks; Johnson, Fricker, halfbacks; Werden, Penfield, ends; Stein, Harrington, Tacles; Dixon, Stewart, guards; Austin, center.

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## ATHLETICS

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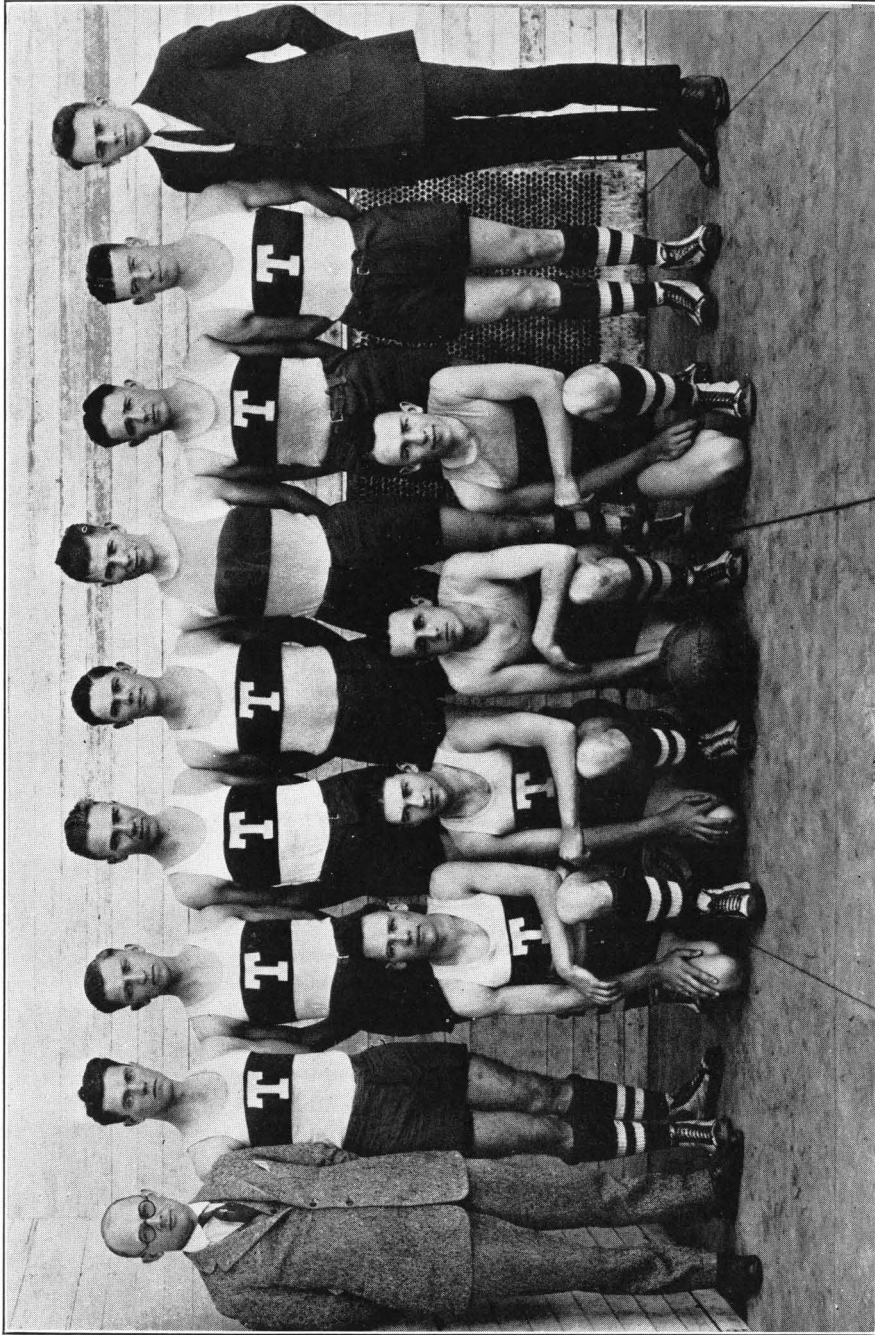
### FRESHMAN FOOTBALL SQUAD

MUSSELMAN, Coach  
SAWYER, End  
DITZER, Guard  
COPELAND, Quarter  
HARDEN, Tackle  
JOHNSON, Right Half  
KEMP, Quarter  
FRICKER, Left Half  
BEED, Tackle  
COPELAND, Quarter  
GRAHAM, Guard  
PENFIELD, End  
DIXON, Tackle  
BALL, Guard  
BAKER (Capt.), Fullback  
AUSTIN, Center  
STEWART, Tackle  
HERRINGTON, Guard  
WERDEN, End  
TEMPLE, Manager

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BIG T 1923

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MUSLEMAN MALTBY BRUNNER SCHEEL GROAT SMITH GARVER MORRELL  
YOUNG SHAFER BANKS MAURER



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## ATHLETICS

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# BASKETBALL



CALTECH finished the season tied for fifth place with Whittier College, but nevertheless the season was a success in the truest sense of the word.

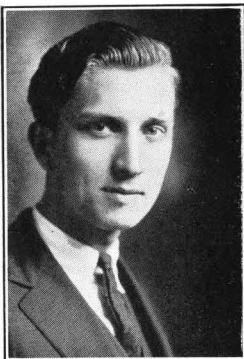
The opening of the 1922-23 Basketball season found Coach Musselman laboring with a difficult situation. None of last year's regular players were back at their old positions, and it was necessary to mold an entirely new team from last year's Freshmen and varsity substitutes. With only several weeks of practice before the first league game, it was not possible to even expect a combination which would defeat the other much more experienced conference teams.

Though the team practiced at the Y. M. C. A. it was able to use the large floor only three hours a week, which is obviously not sufficient time to produce a winning combination.

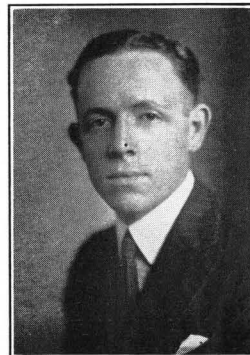
The success of the team rests in its improvement as the season progressed, and in that every one of this year's team, and substitutes will be eligible for competition next year.

The men who received letters were: Banks (Captain) and Brunner, forwards; Groat and Scheel, centers; and Shafer, Smith and Maltby, guards.

Those men who were invaluable in the molding of the team, and who worked faithfully throughout the season, thereby receiving monograms are: Garver and Maurer, forwards; Young, guard; and Gandy, center.



CAPTAIN-ELECT BRUNNER



CAPTAIN BANKS

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## B I G T 1 9 2 3

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### CALTECH vs. SOUTHERN BRANCH—15-40

The first conference game was with the three times champions, Southern Branch, who presented a dazzling offense, and a powerful defense that Tech could not solve at all during the first half, which ended 23-5 in favor of the visitors. Gibbs, playing his fourth year put up a remarkable exhibition of basketball.

In the second half the Engineers fought with their back to the wall, and made a much better showing, Banks and Groat augmenting the total to 15 against 40 for the Branch. Maltby, Smith, and Maurer put up a game fight against big odds, but their best was not enough to alter the final result.

### CALTECH vs. OXY—16-25

In the second game Tech travelled over to Oxy with blood in their eyes. The squad had learned much from the Branch game, and the improvement in team work was apparent. Passes were surer, and defense tighter, but the Engineers had not yet found their basket-shooting eye.

Oxy got off to a quick start and had piled up a big lead before Tech's team found themselves, after which it was a nip and tuck affair to the end. The first half ended 19-6 in Oxy's favor.

In the second period the Engineers came back a rejuvenated team. Scheel, Groat, and Banks carried the ball down the floor time after time and the Tigers were unable to penetrate the defense, headed by Smith and Maltby. The score was brought as close as 21-16 before the Tigers were able to stem the tide. At this juncture Tech had tough luck on a few shots, and Oxy caged two more, bringing the final total to 25-16.

### CALTECH vs. POMONA—18-23

The Beavers entered the third game with a determination to win till the final whistle blew, and they certainly did not lay down for a minute.

Almost a repetition of the Oxy game in some ways, Pomona got a lead in the first half which the Engineers could not overcome, try as they might. Braven Dyer made some almost impossible shots in this half, which ended 11-5. The game was closely guarded by both sides throughout.

In the second half Tech outpointed the Sagehens, but did not score quite enough to win the game. Groat and Brunner did some fancy shooting, which kept Pomona in hot water, while Shafer and Maltby put up an excellent exhibition at guard.

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## A T H L E T I C S

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### CALTECH vs. REDLANDS—34-51

The fourth game found Tech still unable to break into the percentage column, but nevertheless, the game was fast and exciting throughout. The offense on both sides was particularly strong, as is evidenced by the score, 51-34. The Redlands floor was quite large which made flashy offense much easier.

Banks, newly elected captain of the Tech quintet played rings around the Redlands guards, scoring 17 of his team's points. Brunner and Shafer also played particularly good games. The team as a whole showed a hitherto unknown dash and speed. Meillette, for Redlands made some remarkable shots, and scored 29 points.

### CALTECH vs. WHITTIER—19-17

Tech entered the last game of the first round, determined to win, and they did; Whittier being the victim of the Engineers.

The game was a see-saw affair from start to finish, and although Tech was several points ahead at all times, the game was not decided till the last whistle blew. A last minute rush by the Quakers lacked two points, and the game ended 19-17. Banks, as usual, was high point man, scoring 11 of Tech's points. Smith and Shafer put up a tight guarding game that the Whittier forwards could not penetrate. Compton, who scored all of Whittier's points was forced to make most of them from difficult angles. This win left Tech and Whittier tied at the end of the first round; one game won and four lost.

### CALTECH vs. SOUTHERN BRANCH—13-42

In their second game of the season, Tech put up a game fight against the Branch, but could not solve their brilliant passing attack, and air-tight defense. The whole team put up a game fight, but were no match for the more experienced Cubs, who it may truly be said, played a remarkable game. Bresee and Hoppenyan, it seemed could shoot from any part of the floor, regardless of how close guards were.

### CALTECH vs. OXY—35-23

All the fight that had been growing during the past few games burst like a bomb on the unexpected Tigers from Occidental College. Tech outplayed them in every department of the game. It seemed like a rejuvenated team that took the floor. Even the score, 35-23 does not indicate the improvement in the playing of the team. The score at the end of the first half was 18-12. Brunner and Banks did most of the point scoring, garnering 17 and 12 points respectively. Groat, and later Scheel played brilliant aggressive games at center.

## Freshmen Basketball

THIS year's Frosh basketball team was truly one of the best peagreen quintets turned out at the College for several years, but it seemed the men never did justice to themselves in a game. Coach Joe Larsen developed a passing attack that was almost flawless, and almost invariably the men carried the ball down within scoring distance, only to miss an easy shot. The erratic shooting was probably due more to a lack of a good floor to practice on than to any other one cause.

The team had a number of practice games before the season, almost all of which were lost. Most of the practice games were with high schools in the proximity of Pasadena. Pasadena High was met several times. La Verne College and the Los Angeles Night School teams were also met, the latter resulting in a victory for Tech.

In the Conference games the Frosh had little luck, losing all the scheduled games. Oxy defeated Tech twice, the first game being 20-9, and the second one 15-13. Oxy got a big lead in the first half which Tech could not top in the first game, even though they outplayed the Tigers in the second half. The second game was a nip and tuck affair, and was anybody's game till the last second of play.

Pomona defeated the Tech frosh 18-7. Two of the first lineup were detained on the road to Pomona, and when they got there Pomona had set up quite a lead, which Tech could not touch in the remaining half.

S. B. U. C. also handed Tech the short end of the score, 26-10, in a decidedly one-sided game. Tech could not find the basket at all during the first half, and in the second half only after the Branch put in a string of substitutes.

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## ATHLETICS

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“Art” Werden, captain of the team played a remarkably fine game at floor forward. His passing and floor work are better than most varsity men, and with a little more practice at shooting baskets he will make a valuable member of next year’s varsity.

“Stu” Johnson played the standing forwards position in fine style, and was responsible for most of Tech’s points. He is a fast and elusive player, aggressive, and a sure passer.

Jack Baker, at center, worked splendidly with Werden on floor plays, and got the jump-off almost invariably.

“Bob” Stein was a pillar of strength at standing guard and stopped more than one likely basket by the very force of his body.

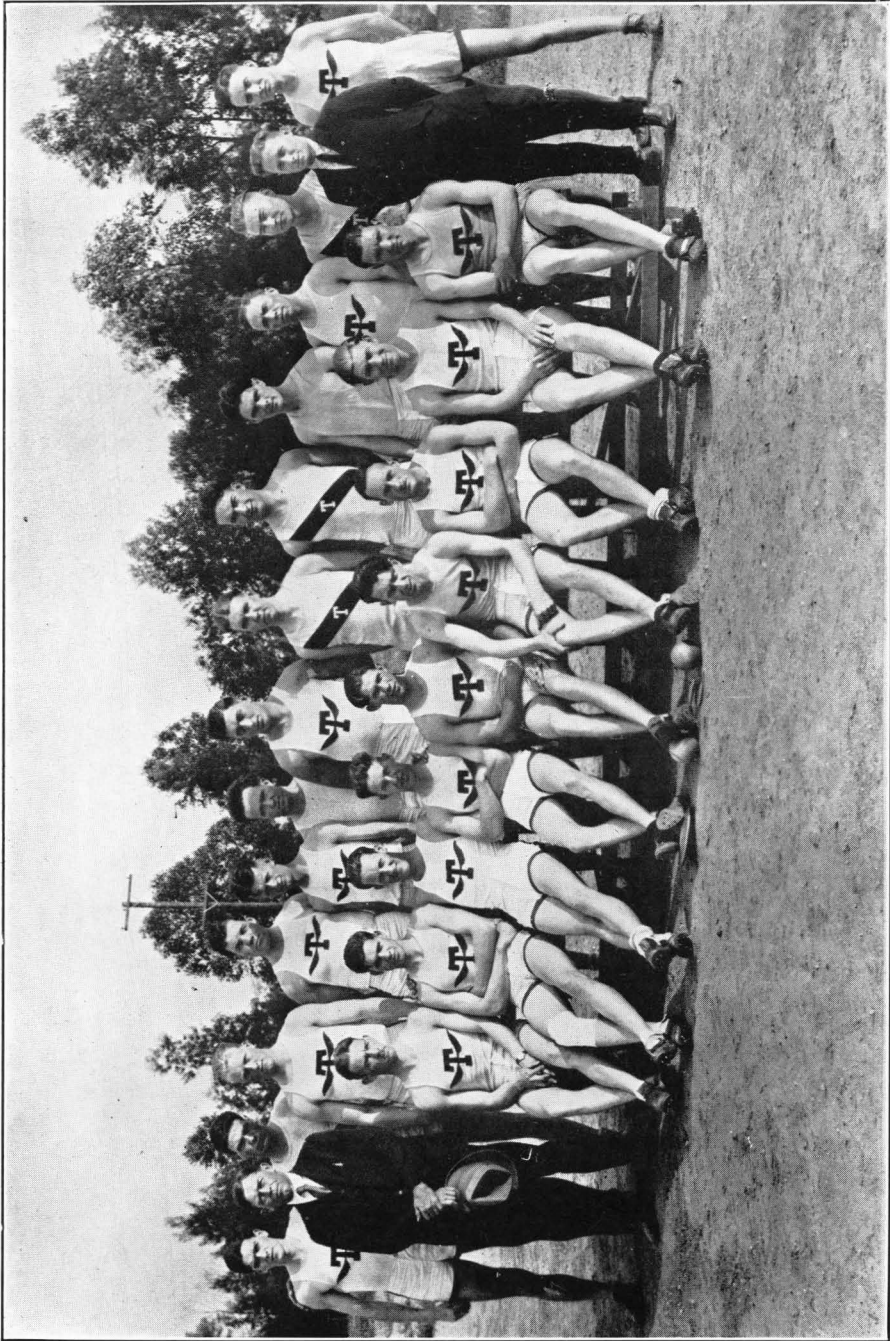
“Ted” Coleman completed the first lineup, playing floor guard.

The other men to receive numerals were Streit and Pyle, both guards.

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BIG T 1923

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## ATHLETICS

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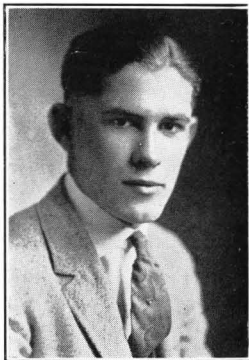


**F**OLLOWING close on the heels of the closing football game, the 1923 Track season gave early promise of being an eye-opener. Due to the shortness of the Conference Track season and the abnormally keen competition in Southern California, Tech has never been favored with Olympic track teams.

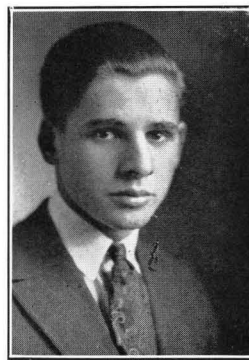
With nearly fifty men out and the best coach in the west, prospects looked rosy indeed. But, Dame Fortune made a wild throw and after nearly a solid month of wet weather and the loss of several promising men through injuries sustained in Inter-class football, the team had shrunk to the real workers. Our main strength was in the distances and weights with a prayer in the hurdles.

The decision of the Student Body to award medals for places in the Inter-class meet marked a mile stone in Tech's cinderpath history, and at once put track on the basis it enjoys in all large colleges.

From the standpoint of large scores and meets won, this year was not outstanding, but the spirit among the men and the display of "Tech Fight" in every event has so far been unparalleled. For this we owe endless gratitude to Coach Stanton who is planning for great things in Tech's coming track teams.



CAPTAIN FOWLER



CAPTAIN-ELECT HOFFMAN

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## B I G T 1 9 2 3

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### OXY MEET

The first dual meet of the season was with Oxy on Patterson Field, and was the first track meet with the Tigers in three years; the last two were postponed on account of rain. Much interest was evident as Pipal's flock was conceded the strongest in the Conference, and a walk-away seemed inevitable. But in spite of the dope, the score was only 91-40.

Keech just naturally ran away with the mile at 4:31:2, and after a few breaths worried Sloan so badly in the two mile that he failed to live up to his reputed fame, and Keech broke the tape at 10:19.

Reeves garnered the hammer with a throw of 120 ft. 8 in. and Moyses scooped up second. Baier warmed up by taking third. Hoffman copped second in the mile and lost the 880 by inches, when he ran the last 220 neck and neck with Ellsworth. His fight was an inspiration to the whole team.

Captain Fowler galloped to the tape in both the hurdle events, winning the lows in the creditable time of 25:4/5 secs. Alderman was close behind in both, but was nosed out in the last few yards of the lows by the Tiger entry. Argue was high point man with 31 points and Powers close behind. The relay went to Oxy.

### CONFERENCE MEET

The big bleachers at Alumni Field, Claremont were filled to capacity Saturday, March 17th, when the Conference meet held sway. The 17th marked the end of a week of final term exams for Tech and the absence of the S. B. U. C. meet together with the nervous strain proved too much for Keech and Hoffman. They failed to place in either the mile or two mile to the surprise of everyone.

Reeves copped second in the hammer and Baier had first place in the discus with only two more throws to make, but he had to be satisfied with third. Fowler succeeded in breaking into Pomona's circle in the hurdles by taking third in both high and low. His two points spilled the meet for Pomona, and the fast time of 15:2 and 25 flat might indicate he earned all he got.

The most exciting race of the day was the relay, which was won by Occidental when Powers with a slight lead managed to break the tape less than a foot ahead of Gardner of Pomona. This gave the meet to Occidental with 61½ points. The other points were distributed as follows: Pomona 60; S. B. U. C. 12; Tech 6; Redlands ½; Whittier 0.

### SOUTHERN CALIFORNIA-STANFORD MEET

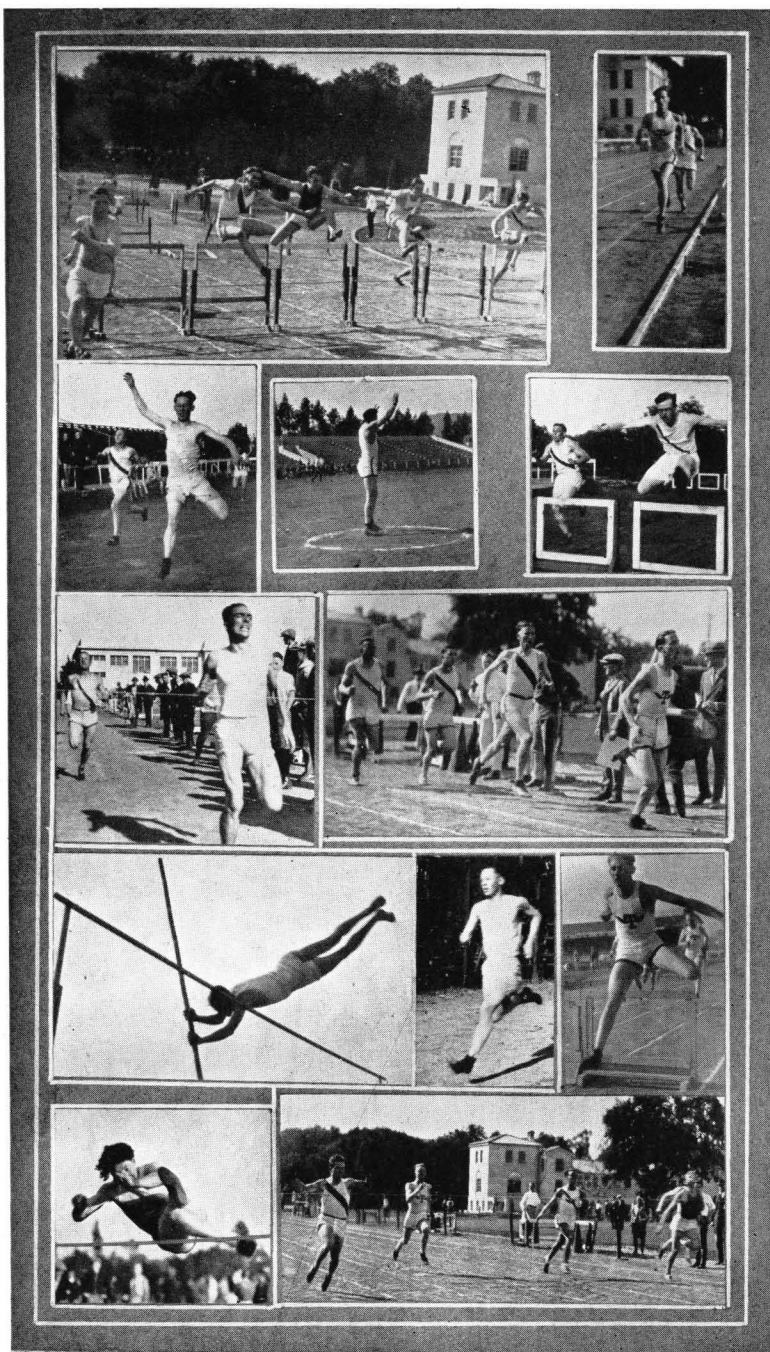
Keech, Tech's star distance man travelled to Stanford with the Southern California Conference track team, which defeated the Cardinals for the first time in two years by a score of 74-66. He took the two mile event in the exceptional time of 9 min. 52 sec. This was Tech's only entry in the meet, and it proved to be one which fittingly upheld Tech's reputation of the cinderpath.



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ATHLETICS

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## The Freshman Track Season

**T**HE Class of 1926 has had, without a doubt, the most successful Freshman class track team in the history of the college. More meets were held, better time was made, and a larger number of men were on the team than ever before.

The season opened in a meet with L. A. High. Although the Freshmen did not win, they took most of the first places and the final score was close. South Pasadena was taken on the following week and was sent home with the short end of the score. The first meet in which the men really showed their class was with Monrovia and Glendale. The Freshmen took every first place except two, and made the score as follows: Freshmen, 72; Glendale, 22; Monrovia, 20. The Frosh Conference meet was held at Tech. Pomona won, with Tech and Oxy nearly tied for second. The young Engineers did their stuff in fine shape, and gave the others a hard race. Two post season meets were held, one with Fullerton and another with Hollywood which proved to be the Southern California champion. Both of these meets were lost by a close score.

In addition, the freshmen placed more men in the A. A. U. meets than the varsity, which looks well for next year.

Several Records were made which should be mentioned. Ten seconds flat was made in the hundred yard dash by Darling, and he also did 20 ft. 2 in. in the broad jump. Graham made 11 ft. 11 in. in the pole vault, and will do better. Garner won every race he entered except the A. A. U. meet, and was really the mainstay of the team. These men will do big things on the varsity next year.

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A T H L E T I C S

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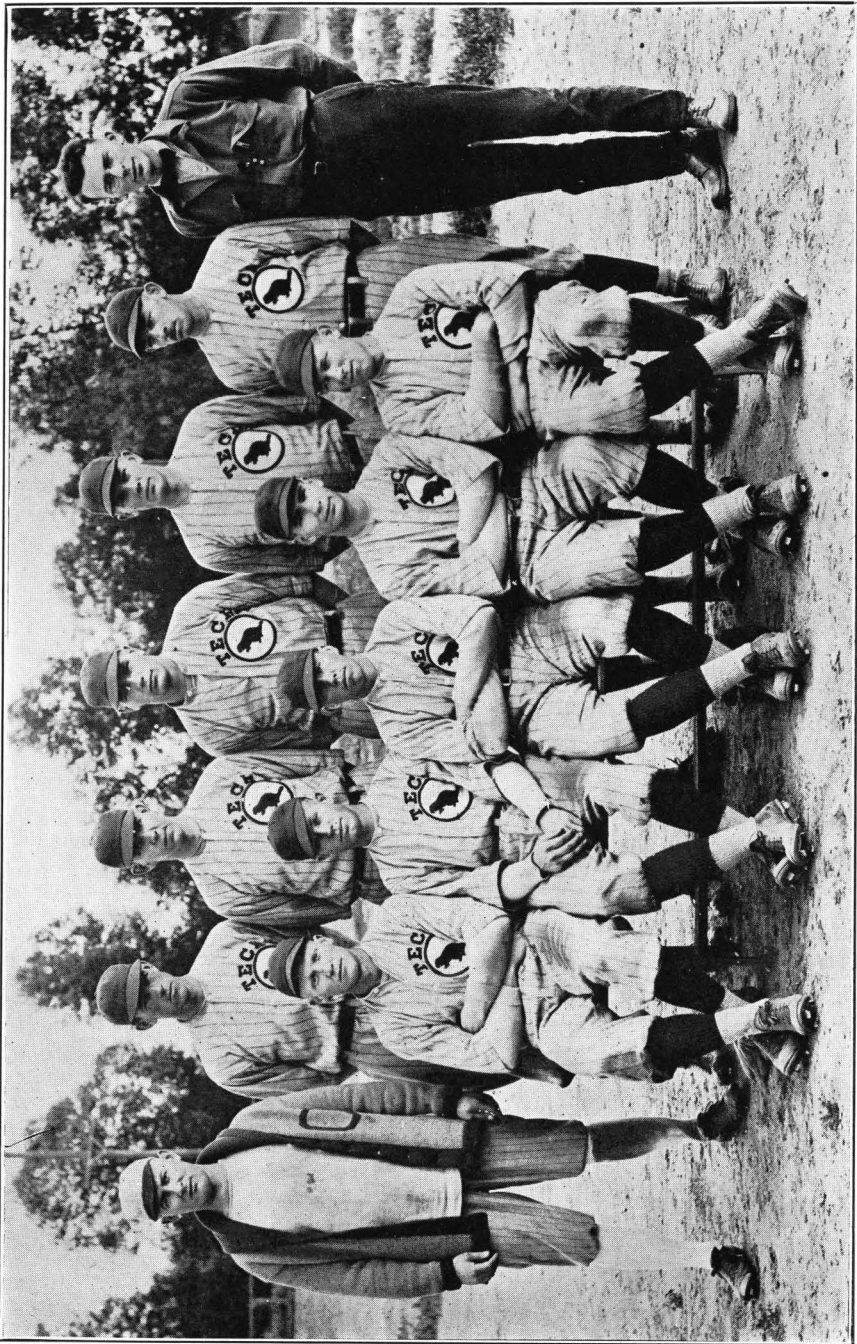


Garner, Erickson, Mills, Carter, Dunlap - Mile and Half Mile  
Darling, Schultz and Edwards - - - - - Sprints  
Pomerey and Bidwell - - - - - Hurdles  
Edwards, Hewston and Stein - - - - - Weights and Discus  
Hewston and Van den Akker - - - - - High Jump  
Darling and Van den Akker - - - - - Broad Jump  
Graham - - - - - Pole Vault

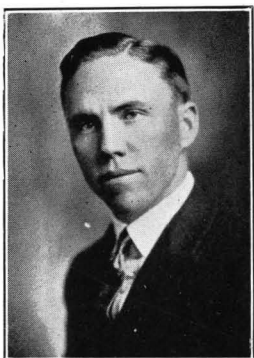
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BIG T 1923

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# BASEBALL



CAPTAIN PRESTON

**A**T this writing, it does not appear what the outcome of the baseball season will be, but from the review of the first few games it appears that the team will represent the Institute with the same old Tech spirit. Although letter men were not very plentiful, the squad has been rounded into excellent shape by Coach Musselman.

Groat on the mound is the mainstay of the team, and promises to surpass all chuckers of the Conference. At the receiving end, Weitekamp shows up as a catcher of the best quality. Larabee, Alcock, Broady, Peterson and Preston are covering the infield like professionals. The outfield is even stronger than last year's. With men of such high caliber as Captain Moyse, Skinner and Leavitt, Tech has an outfield that will be a credit to any institution in the Conference.

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BIG T 1923

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CALIFORNIA TECH					POMONA						
Player	AB	R	1B	PO	A	Player	AB	R	1B	PO	A
Broady, ss.....	4	0	1	0	3	Ovington, c.f.....	4	0	0	1	0
Moyse, l.f.....	5	1	0	6	0	Afook, 2b.....	4	2	1	2	2
Weitekamp, c.....	5	1	0	6	0	Johnson, s.s.....	5	2	0	1	1
Groat, p.....	4	1	2	2	7	Doughty, c.....	5	2	1	12	1
Alcock, 2b.....	5	0	1	6	3	Frater, 1b.....	5	1	1	7	0
Peterson, 3b.....	4	1	0	1	2	Cole, l.f.....	3	0	0	2	0
Skinner, c.f.....	1	1	1	0	0	Clarke, r.f.....	4	0	3	0	0
Leavitt, r.f.....	5	1	1	0	0	Lacey, 3b.....	3	0	0	2	1
Larabee, 1b.....	3	0	1	11	2	Walker, p.....	4	0	1	0	1
Blunt *.....	1	0	0	0	0	Beechum, 2b.....	1	0	0	0	0
	—	—	—	—	—	Dyer, l.f., p.....	1	0	0	0	1
Totals.....	39	6	9	27	18	Rawson, p.....	0	0	0	0	0
							—	—	—	—	—
						Totals.....	39	7	7	27	7

\*Batted for Larabee in ninth.

	1	2	3	4	5	6	7	8	9	Ttl.
California Tech .....	0	3	0	0	2	0	0	0	1	6
Hits .....	0	4	0	0	2	1	0	0	2	9
Pomona .....	3	0	2	1	0	0	0	0	1	7
Hits .....	2	1	1	1	0	0	0	1	1	7

Errors—Afook, 2; Broady, 5; Alcock, Peterson, 2; Lacey. Innings pitched—By Walker, 8; by Dyer, 1; Rawson, to 1 batter. Credit victory to Walker. Charge defeat to Groat. Struck out—By Walker, 11; by Groat, 6; by Dyer, 1. Bases on Balls—Off Groat, 1; off Walker, 4; off Rawson, 1. Hit by Pitched Balls—Groat, by Walker; Cole and Lacey, by Groat. Stolen Bases—Groat, Moyse, Afook. Two-base Hit—Afook. Sacrifice hit—Ovington. Double play—Moyse to Alcock. Time of game—2 hours. Umpire—Gohenix.

Game played at California Tech.

## ATHLETICS

CALIFORNIA TECH						REDLANDS					
Player	AB	R	1B	PO	A	Player	AB	R	1B	PO	A
Broady, s.s.....	4	0	0	2	1	Smith, c.....	4	0	0	10	1
Moyse, l.f.....	4	2	1	0	0	Belcher, 2b.....	4	0	0	3	3
Weitekamp, c.....	4	0	0	10	3	Gains, c.f.....	4	0	0	0	0
Groat, p.....	4	2	2	0	2	Brumbaugh, 1b.....	4	0	0	6	0
Alcock, 2b.....	3	0	0	2	3	Yochum, r.f.....	3	0	0	1	0
Peterson, 3b.....	4	1	1	1	2	Meillette, 3b.....	3	0	1	3	1
Skinner, c.f.....	4	0	0	2	0	Over, l.f.....	3	0	0	0	0
Leavitt, r.f.....	4	1	0	0	0	Jeffers, s.s.....	3	0	0	1	0
Larabee, 1b.....	4	0	1	10	0	Jensen, p.....	3	0	2	0	1
— — — — —						— — — — —					
Totals.....	35	6	5	27	11	Totals.....	31	0	3	24	6

	1	2	3	4	5	6	7	8	9	Ttl.
California Tech .....	2	0	0	2	2	0	0	0	x—	6
Hits .....	2	0	0	2	1	0	0	0	x—	5
Redlands .....	0	0	0	0	0	0	0	0	0—	0
Hits .....	0	0	1	0	1	0	1	0	0—	3

Errors—Peterson, Broady, Larabee, 2; Belcher, 2; Meillette, Jensen, Gains. Credit victory to Groat. Charge defeat to Jensen. Struck out—By Groat, 10; by Jensen 10. Base on Balls—Off Groat 1. Hit by Pitched Ball—Alcock, by Jensen. Stolen Base—Smith. Home Run—Groat. Double Play—Broady, unassited. Time of Game—2 hours. Umpire—Gohenix.

Game played at California Tech.

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BIG T 1923

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CALIFORNIA TECH						OCCIDENTAL					
Player	AB	R	1B	PO	A	Player	AB	R	1B	PO	A
Broady, r.f.....	4	2	1	0	0	DeMendel, 3b.....	3	2	1	1	0
Moyse, l.f.....	5	1	2	1	0	Norton, l.f.....	1	0	0	0	0
Preston, s.s.....	6	2	2	0	1	Tanaka, c.f.....	4	0	1	0	1
Groat, p.....	4	2	1	3	3	Powers, p., r.f.....	3	0	1	2	0
Alcock, 2b.....	4	2	2	0	3	Pyle, 2b.....	3	1	0	4	0
Weitekamp, c.....	4	2	2	11	2	Fulton, p., r.f.....	4	0	0	1	2
Peterson, 3b.....	5	0	0	0	1	Betts, s.s.....	4	1	0	0	4
Skinner, c.f.....	5	1	3	0	1	Olson, 1b.....	3	0	0	7	1
Larabee, 1b.....	5	1	3	12	0	Rigby, c.....	4	1	1	9	1
Leavitt, * .....	1	0	0	0	0	Argue, l.f.....	3	1	2	0	0
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Totals.....	43	13	16	27	11	Totals.....	32	6	6	24	9

\*Batted for Broady in ninth.

	1	2	3	4	5	6	7	8	9	Ttl.
California Tech .....	2	3	0	4	2	0	2	0	x	13
Hits.....	3	4	2	2	2	1	1	1	x	16
Occidental .....	0	0	0	2	0	0	0	2	2	6
Hits.....	0	0	0	2	0	0	4	0		6

Errors—DeMendel, 2; Argue, Tanaka, Pyle, Fulton, Preston, Groat, Skinner, Larabee. Innings Pitched—By Fulton 5; by Powers, 3. Credit victory to Groat. Charge defeat to Powers. Struck Out—By Groat, 9; by Skinner, 2; by Fulton, 4; by Powers, 3. Bases on Balls—Off Groat 2; off Skinner 1; off Fulton, 2. Hit by Pitched Balls—DeMendel by Groat. Stolen Bases—Weitekamp, Moyse. Sacrifice Hit—Moyse. Double Play—Groat to Larabee. Time of Game—2 hours, 5 minutes. Umpire—Miles.

Game played at California Tech.



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## ATHLETICS

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### Freshman Baseball

Like all Freshmen athletics in the past years, baseball has been more or less unimportant. But with the natural growth of the Institute, and the rapid advancement of Freshman athletics, baseball has by no means been left behind.

This year the call for candidates was sent out early in the season, and about twenty came out in suits. The year has been indeed a very successful one. Although all games played were not victories, nevertheless the men on the team showed that they have varsity stuff in them, and next year's Varsity will see many of this year's Freshmen team in it.

The Freshmen were fortunate in having George Ramseyer as coach. Not only does he know the game like a book, but has many years experience on the diamond. It is due to his efforts that this year's team was the success that it was.

Most of the games played were with high schools, although the best game played was with Whittier State; Tech won by a score of 4 to 3. This game really showed what ability the Freshmen had. The Oxy game was also an indication of their class; the game was won in the ninth on two errors, the final score being 5 to 3. The men who made the Freshman team are as follows: Kemp, McClain, Maechtler, Degnan, Fricker, Allyn, Werdon, Houda, Parker, Triggs, Parnal, Coleman, Lutee, Baxter, McFarlane, Ingersoll, Kagiwada.

## Tennis

ONE of the advantages we have here at California Tech is the close association existing between the faculty and the student body. This is in part brought about by the interest taken by the faculty in the athletic teams and more especially in the tennis team. Until last year the chemistry wise men monopolized the courts. Their boasting grew so unbearable, however, that the physicists imported several formidable racketers and to prove their supremacy inaugurated an annual Faculty Tournament. This year the combined forces of the faculty met and defeated the S. B. U. C. faculty on the Southern Branch courts 6-1, and in a return match defeated the Cub professors 4-3. Professors Bell, Greenlees, Darwin, Lacey, Bozorth, Watson, Weir and Lucas comprised the Tech team.

The increase in popularity of tennis among the lower classes of the Institute is evidenced by the doubling of the number signed up for tennis for Physical Education credit for the third team as compared to the first term.

The graduation of Shugart, Kohtz, and Honsaker of last year's team left Lynn, this year's captain, to build a team. There were no other men of experience in college, but several new men came through in fine style, and made possible the very good showing made by Tech in this year's Conference play. Captain Lynn played first man throughout the season, playing an exceptionally fine brand of tennis. Todd Nies emerged from the elimination tournament with a clean slate and played second singles. Lynn and Nies handled the first doubles.

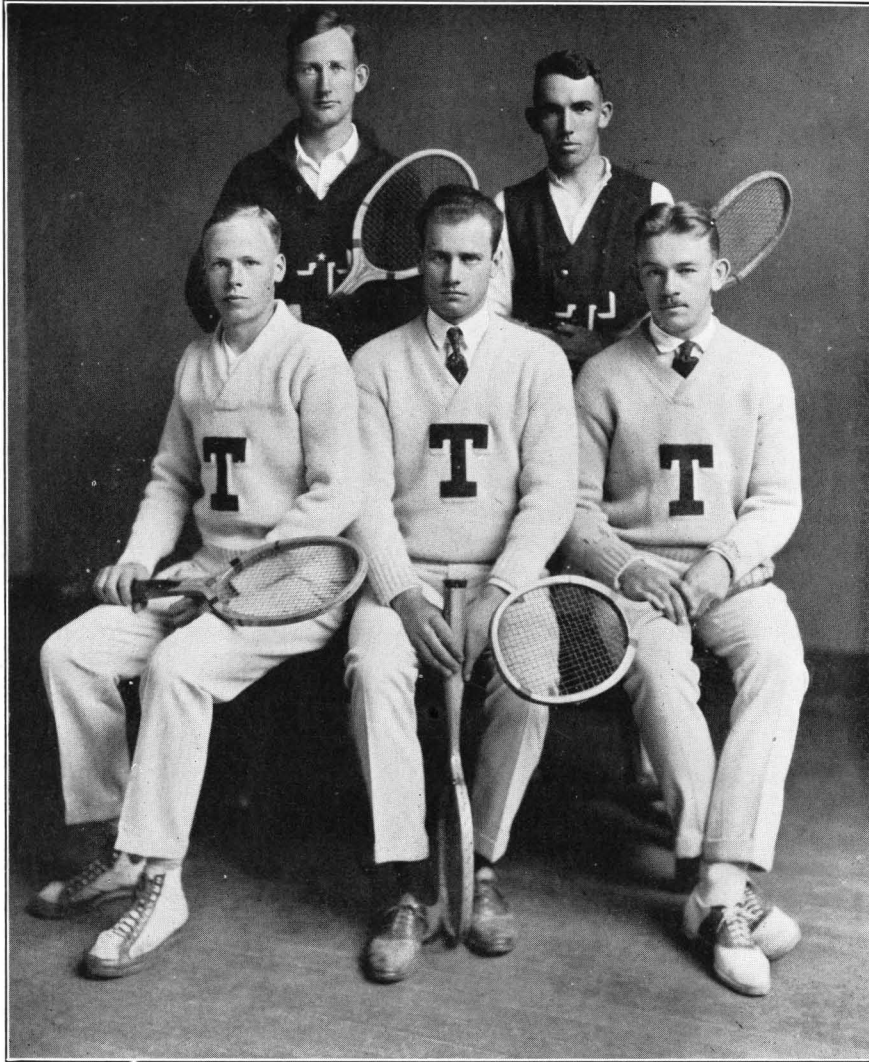
Dick Skinner transferred from M. I. T. last year and so was ineligible until this year. He played throughout the season as third man and with Lyle Dillon as his partner played second doubles. Doug Kendall held down the position of fourth singles and came through in fine form. Skinner acted as Coach and Manager of the team.

The team did very creditable work and finished in third place, defeating Occidental, Redlands and Whittier, and losing to Pomona and S. B. U. C. The Branch has the same men this year that formed its championship team last season. The Pomona match was a hard one to lose, the team being at a distinct disadvantage on Pomona's dirt courts. As it was, however, all of the sets went to deuce, and the play was hotly contested throughout.

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## ATHLETICS

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LYNN KENDALL  
NIES DILLON SKINNER

Captain Lynn and Todd Nies represented the team at Ojai this year. They were matched against Stanford's best and were eliminated early in the play. In the doubles they drew a bye in the first round, and defeated Occidental in the second. In the semi-final round they met California's first doubles team and met defeat.

The entire team this year was composed of Seniors and their graduation will leave quite a hole in Tech's tennis ranks. The intramural matches started by the Physical Education Department will do a great deal in preparing men for next year.

*One Hundred Seventy-one*

## Swimming

Last year's swimming team left behind it a clouded title to the Conference Championship cup and a scarcity of material with which to clear it up. Of the eight lettermen scheduled to return this year only two were on hand to start the season, Captain Harries and Joe Mayer. Until three weeks before the first meet there were not enough candidates out to make a full team. An appeal to the student body brought out new material which was hastily whipped into shape for the dual meet with S. B. U. C. This was a meet of a few against many, but Tech's few gathered in five first places and the relay, defeating the Cub mermen 41-36.

Occidental and the other colleges defaulted to Tech and by virtue of the Engineers' win over the Branch the Conference championship fell her way, and with it the first leg on the new three-time trophy presented by T. V. Allen.

The Conference meet was held under the auspices of Tech in the Pasadena High plunge. Pomona, Occidental, S. B. U. C., and Tech entered teams. S. B. U. C. entered the affair fully resolved to turn the trick against Tech and the meet soon developed into a dual meet between the two. Tech's few, swimming in as many events as they were allowed, again copped enough first places to come out on top. The Tech relay team won out by a scant yard and so annexed the big Relay Cup presented by Mullen & Bluett. The final score of the meet follows: Tech 37, Southern Branch 34, Occidental 7, Pomona 4.

Coach Skinner deserves not a little credit for the good work he has done with the swimming team this year. Starting with a handful of inexperienced swimmers, he developed a truly formidable aggregation of mermen. Not only did he coach the team, but handled the managerial duties involved during the season, as well as never failing to cop a first in the dives. He swam a lap in the relay in every meet, and took points in the dashes.

Captain Harries helped defeat the Branch with a first in the plunge in the dual meet and a third in the Conference Championships. Shafer of Pomona barely nosed him out for second in the Championships. Weinland, a Tech swimmer new to this year's varsity, taking first and incidentally breaking the Conference record for the event.

Lyle Dillon came out at the first of the season a novice to the game. He worked himself into shape in time to swim as lead off man on the winning relay team to win the backstroke in both the dual meets and the Championships.

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## ATHLETICS

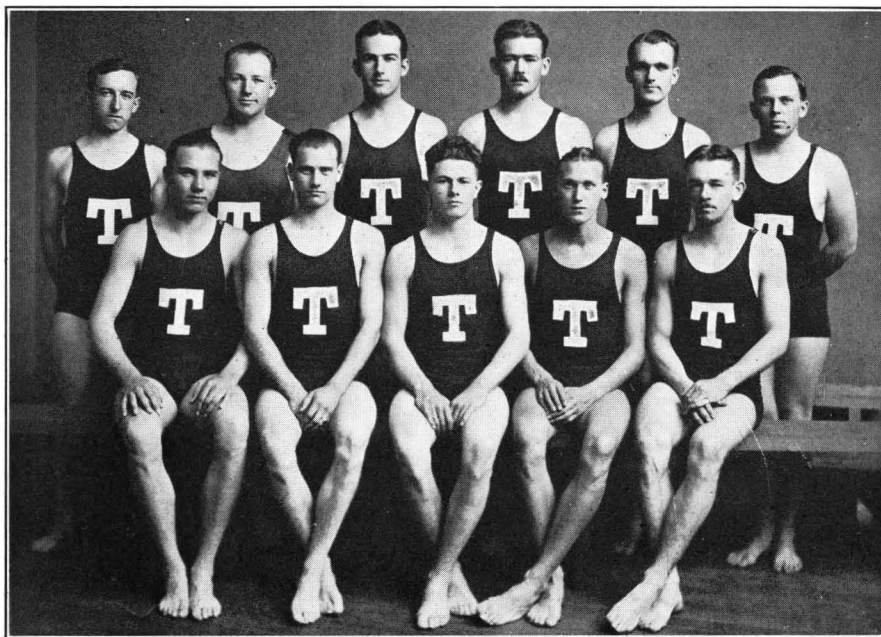
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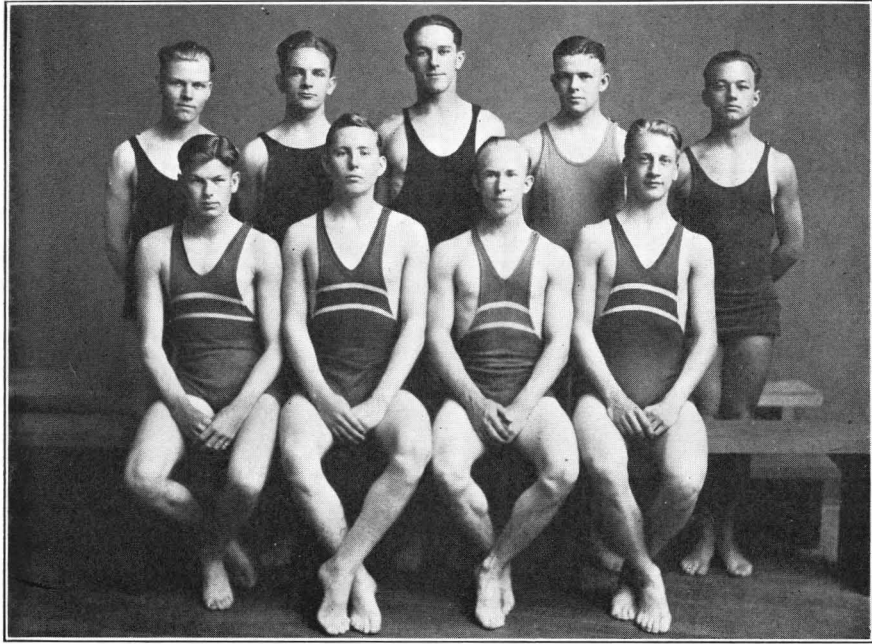
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Joe Mayer, last year's 440 champion, did himself proud by being high point man in both meets by winning both the 220 and 440, as well as swimming anchor on the relay team. He bettered his last year's 440 record by 9 seconds, swimming the distance in 6 minutes and 57 seconds. He will undoubtedly be next year's captain.

Scheel answered the appeal to the student body and by hard practice rounded into condition, turning in the deciding points in both meets. He placed second in the 100 both times, and swam in the relay as well.

Squid Seares, and Bernie Evans did their part by roping thirds in their respective events, the dives and the 220, in both meets.





## Frosh Swimming

The new system of Physical Education classes enabled the Freshmen to develop the best team the Conference has ever seen. A large squad was practicing under Coach Skinner for the entire two terms prior to the opening of the season.

Southern Branch came over to Pasadena determined to trim the Frosh and returned to the Vermont Avenue campus a very surprised crew of swimmers. Tech's polliwogs walked away with the relay and every first place in this meet. Not only did they win every event, but crushed Conference records in practically all of them.

Joe Matson was elected Manager at the first of the season and towards the close was chosen Captain. He was high point man in every meet, never failing to turn in first in the dives, the back stroke, and the plunge, beside turning in a fast lap in the relay. He will probably coach next year.

Wingfield was unbeatable in the 50-yard dash and always swam a fast relay lap.

Muir was undefeated in the 100 and swam anchor on the relay. He should do wonders next year.

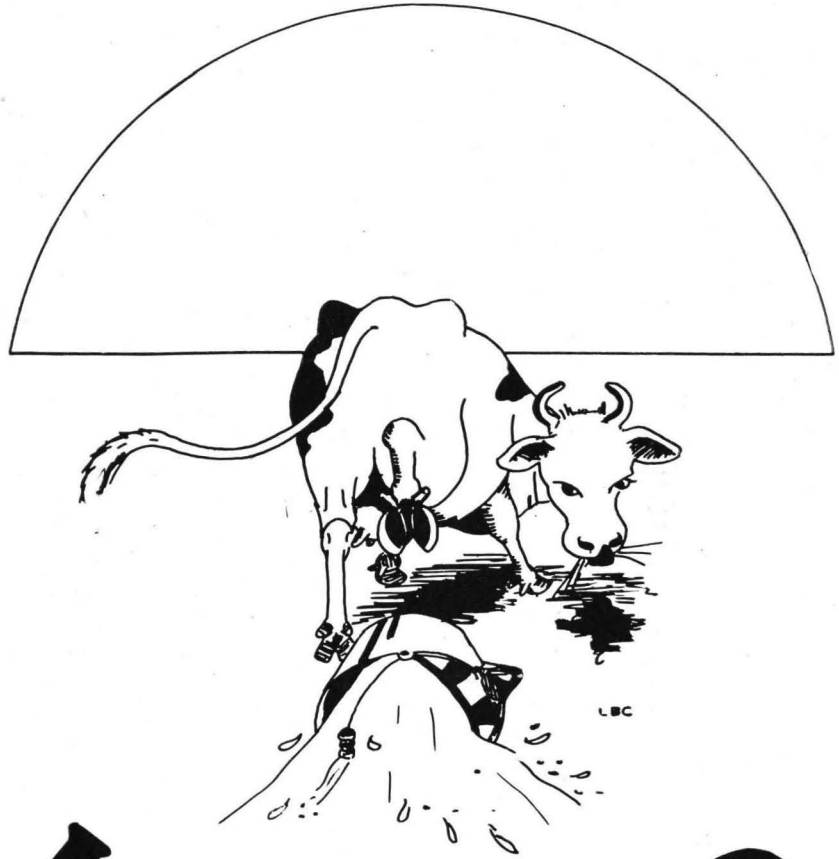
Bryan amused himself by always copping a substantial lead in the 220 and 440 and then watching the others at the turn.

Edwards was undefeated in the breast stroke and Infield always turned in markers in the 220 and 440.

## Boxing and Wrestling

This is the first year that California Tech has had any intercollegiate competition in boxing and wrestling. Previous to this year there were no classes in either sport; nor was there enough interest shown, or enough material, to form a team in either boxing or wrestling. Although a wrestling team was formed this year, not much was done. Two experienced men were entered in a match with S. B. U. C. and both won their events. Practically speaking there has been no class in wrestling this year but it is hoped that more interest will be taken in it next year.

Boxing has been very successful this year, and it is hoped that the interest awakened in the sport this year will be even more so next year. The team this year was picked from the P. E. classes which met three afternoons a week. The showing these men, with no previous experience whatsoever, made was indeed very creditable. After four months work in the class, these men met the boxers from S. B. U. C., an institution which has fostered boxing for four years, finally making it a minor sport this year. Although Tech lost all matches, the results were all close, and the old Tech "fight" was ever present. Two months later, on St. Patrick's Day, the team went over to S. B. U. C. and won one bout, and lost two, and got a three round draw in two of the bouts. All of the team were freshmen and this is indeed a good omen for next year.



**HUMOR**



A correct letter to a prospective father-in-law who is in the advertising business:

JUST A MOMENT

Have you ever stopped to consider the problem of grandchildren? Do you know, for example, that only 58 per cent of the fathers in America are

GRANDFATHERS?

Did it ever occur to you that only 39 per cent of the grandfathers in America ever have

GRANDCHILDREN?

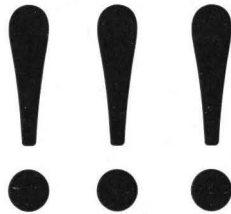
Honestly, now, doesn't there come moments after the day's work is done and you are sitting in your slippers before the fire, when you would give anything in the world for a soft little voice to call you

GRANDPA?

Be fair to your daughter.  
Give her a college educated husband.

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"Perfect Behavior."



Mr. A. A. Newton of Pasadena and Venice of America, who is a prominent member of the 198 in each of these cities, was caught by our staff photographer in the domestic pose illustrated directly above.



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Prosecutor Newton: The accused attempted to defraud a student body peanut machine. I demand that he be quartered and drawn.

Judge Walker: Yes, there can be no leniency! I sentence you to six meals in the dorm.

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Staple and Fancy Groceries, Fresh Meats, Poultry, Grain and Seed, Poultry Supplies, Crockery, Houseware, Stoves, Luggage, Dry Goods, Ready-to-Wear, Millinery, Shoes and Toys.

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Siebrecht's  
House of Flowers

Known from the Atlantic to the Pacific  
*Say It With Flowers*  
Since 1867

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CAMERAS  
SUPPLIES

*F. W. Reed & Co.*  
176 East Colorado Street

DEVELOPING  
PRINTING  
ENLARGING

THAT'S DIFFERENT

The Girl: Did I ever show you where I was tattooed?

The Boy: No.

The Girl: Well, we can drive around that way.—Ex.

*Directly Opposite Strand Theatre. We Know Our Service Will Please You*

Whitfords-Florist

343 EAST COLORADO STREET  
PHONE FAIR OAKS 255  
*Considered Southern California's Finest Shop*

George A. Clark Co.

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*Good Taste in Men's Dress*

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Special Discount to Tech Men

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Pianos and Players

Player Rolls  
Stringed Instruments

HANCOCK MUSIC CO.

EAST COLORADO AT 331

Brunswick Records

Sheet Music

EXPLAINED

Suspicious Wife: I smell cloves.

Hubby: No, m'dear, tain't cloze. Sh-flowrsh on m-necktie.—Ex.

Bill: Bugs must be a pretty wild girl.

Fred: Howzzat?

Bill: Her father says he can hardly keep her in clothes.

*Compliments of*

*A Friendly Organization*

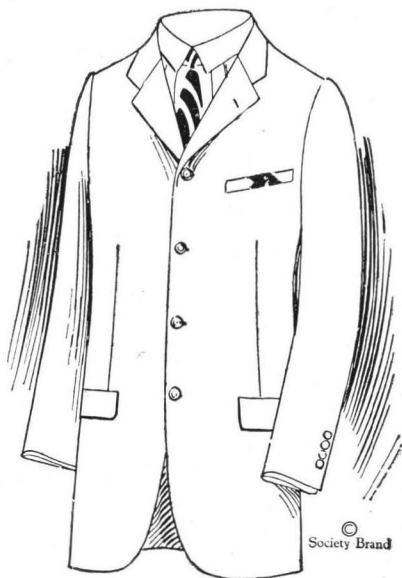
*The Orchid*

*Florist*

TELEPHONE FAIR OAKS 4141

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HERE are Clothes that are really planned—and built under the direction of Clothes-Architects who know what's what for who's who.

A designer who has young ideas for modern thinkers.

Here's the University Model—four buttons—how do you like it?

We've others as good for other tastes.

*Brenner and Wood*  
 Responsible For All Brenwoodwear  
 155 East Colorado Street  
 Pasadena

Wise: No woman will ever marry me for my money.

Crack: I haven't any either.—Ex.

By Wire: "Bathing beauties forgot suits. What will I do?"

Return Wire: "Darn shame. Am sending same by carried pigeon."



STAPLE and FANCY GROCERIES

Housewares — Chinaware

Fruits — Meats — Fish and Poultry

*The Model Grocery Co.*  
 Pasadena, Calif.  
 Colo. 2600



E. PERKINS

J. E. LEDDY

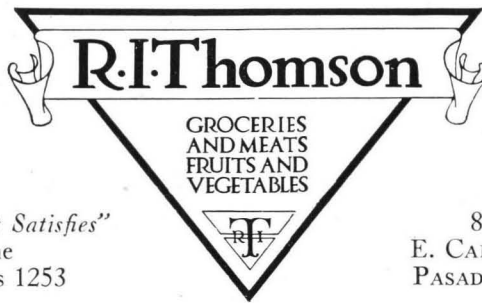
# Perkins & Leddy

*HART, SCHAFFNER & MARX*

Clothes for Young Men

16 E. COLORADO ST.

PASADENA, CALIF.



*"Service That Satisfies"*  
Phone  
Fair Oaks 1253

842-844  
E. CALIFORNIA ST.  
PASADENA, CALIF.

The other night I went to the movies and just as I was about to sit down I noticed that some kind soul had left her gum firmly fixed to the seat. Not wishing to get stuck on anything I moved over one. At an exciting moment a young lady entered and started to sit in the gummy seat, but I, knowing that this would gum the works, shouted:

"Don't sit on that."

"Sir," said she, "don't get fresh. I've sat on that for twenty-five years."—

# Pitzer & Warwick

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BETTER CLOTHES

*For*

COLLEGE MEN

THE HOME OF

# Kuppenheimer

GOOD CLOTHES

*An Investment in Good Appearance*

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PASADENA

CALIFORNIA

J. Harrison: Gee, all the great men are dying and I don't feel so well myself.

Harries: Is this exam to be on Accounts?

Manifestly: No, strictly on a cash basis.

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Where Real Estate Values Are Sure to Increase for the Next Fifty Years or More. Millions of dollars being spent here by generous philanthropists, in the building of one of the greatest Scientific Institutions of its kind in the world, insures the future growth of Beautiful Pasadena, the home of education, culture, science, art and music and "Cal. Tech." will fit your sons for a life of practical usefulness in scientific engineering, in any of its branches.

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*"We Know How"*

**Eldred's**  
**FLOWER**  
**SHOP**

Flowers for Every Occasion

MEMBER FLORIST TELEGRAPH ASSOCIATION

Phone Fair Oaks 227

266 E. COLORADO STREET

An old lady went into a grocery store the other day and after waiting about ten minutes grew impatient. Finally she rapped on the counter and said: "Here, young lady, who waits on the nuts?"

Alice: Why, it's nearly six o'clock. I thought I told you to come after dinner.

Sammie Diack: That's what I'm here for.

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You Will Want a Home of Your Own  
And We Can Get It For You  
*For Real Estate of All Kinds*  
*For Building of Any Description*

ALWAYS CONSULT

THE FRANK MELINE CO.

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Fair Oaks 6260

## Antiseptic Barber Shop

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THE BEST EQUIPMENT

8 CHAIRS

First period class on a cold morning, in the upper room of the barracks:

“The engineers, they have no fears,

These hardy pneumonia riskers.

They think it's nice

To sit in the ice

While the fog blows through their whiskers.”

O. L. BRADDOCK

F. B. BRADDOCK  
Troop 1902

## Braddock's Pharmacy

PASADENA, CALIFORNIA

237 EAST COLORADO ST.  
Both Phones 421

738 EAST COLFRADO ST.  
Phone Fair Oaks 957

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JAMES H. KILROE  
Proprietor

1261 EAST COLORADO ST., PASADENA

*We Thank You for Your Favors in the Past*



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TWO STORES

Store No. 1: 1234 E. Colorado Street

Store No. 2: Corner Wilson and Colorado

Our Soda Fountain Is Handy to Caltech Campus

*Christopher's and Whitman's Candies*

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THE UNIVERSAL TRACTOR

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NEAR CHESTER

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## The El Molino Men's Furnishings

628 EAST COLORADO STREET

*Nearest the College*

NIFTY CORDUROYS

SMART SHIRTS

The meanest man in the world is the roommate who borrows your best tie and then goes out and orders grapefruit.—Wampus.

History Prof.: Does anyone know anything about the Laplanders?

Stude: Sure. I had one out riding with me last night.

COMPLIMENTS

*of*

*The Elite*  
DRY CLEANERS  
& DYERS

COLO. 1349



The Remington Portable

## TYPEWRITERS

Of All Makes

SOLD—RENTED—EXPERT REPAIRING  
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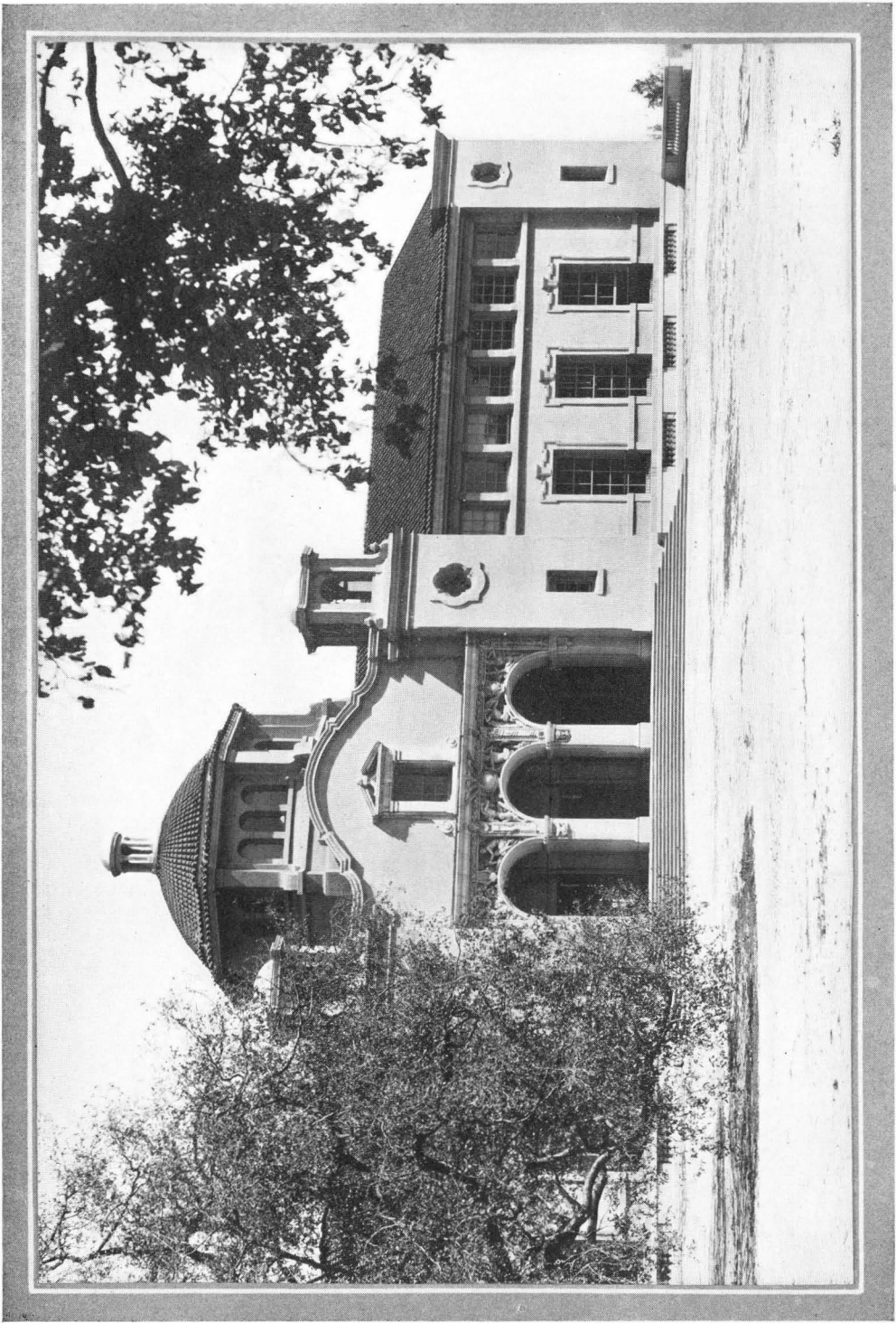
The Remington Portable is the only Portable Typewriter with the Standard Keyboard. 4 Rows of Keys. We are exclusive dealers.

PARKER TYPEWRITER COMPANY  
(Opposite Maryland Hotel)

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Phone F. O. 595

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Pins  
Rings  
Watches  
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Dance  
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and  
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& Co.**

College & Fraternity  
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Stationers

724 S. HOPE ST.  
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**SINCE 1912**

# Kodaks

*Developing*

*Printing*

*Enlarging*

**Harold A. Parker**

East Colorado St. at Madison Ave.

## ON THE WIRE

Ri-nn-nng!

"Hello?"

"Gnome House?"

"Yes."

"Is Harold there?"

"No."

"Is Dick?"

"I'm afraid not."

"I'm awfully lonesome.

Won't you come over?"

"Aw, thanks."

"By the way, who is this?"

"The janitor."

Click!

63 N. FAIR OAKS

PASADENA, CALIF.

# Robinson Co.

THE LEATHER GOODS SHOP

SPORTING GOODS

Hunting, Fishing and Camp Supplies, Traveling Bags,  
Suit Cases and Trunks, Gloves of All Kinds, Blankets  
and Robes, Dress Work and Cartridge Belts, Dog  
Collars and Harness

*The Store Where You Get What You Like  
and Like What You Get*

PHONE F. O. 1068

OPPOSITE CITY HALL

He: I love to dance.

She: So do I.

He: Shake.

*Welcome to Our New Pharmacy*

## Brownfield Pharmacy

Cor. Lake Ave. and California St.

Phone Colorado 8986

PASADENE, CALIF.

Phone F. O. 241

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SHOES OF STYLE AND SERVICE  
For the Young Men

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REG. U.S.  
PAT. OFF.



TRADE MARK

How About Your  
CLOTHING?

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SUITS AND TUXEDOS  
\$40 and Up

*Near the College*  
639 E. COLORADO

Four Doors West of El Molino

## Shoes

which not only are precisely correct in design, but whose reputation insures their durability. A remarkable selection of the finest footwear obtainable.

### Fred T. Huggins Co.



345 E. Colorado St.

Pasadena

After having taken the cigars and pens out of his pockets he came toward her with his arms outstretched.

“No,” she said, “you have deceived me. You have loved before.”

Engineer: Why is it that you like those studies in the nude?

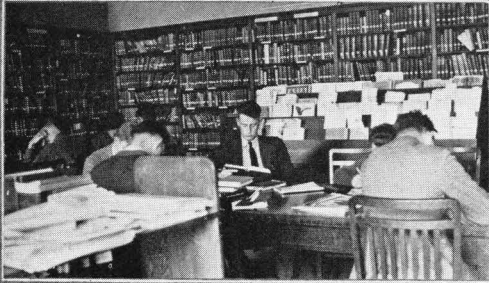
Art Stude: I guess it's because I was born that way.

SEE US BEFORE YOU BUY

*Moldy*  
FURNITURE CO. INC.

Phone Fair Oaks 1181  
65-71 N. FAIR OAKS AVE.

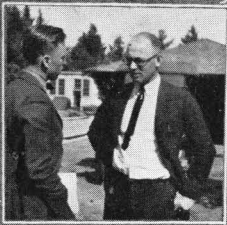
PASADENA, CALIF.



*Studyin'*



*Dorothy*



*Captain of Coach*



*Paul Revere II*



*"The Poon"*



*"Shote"*



*"Happy"*



*"Woofang"*



*"Hansome"*



*Fresh*



*"Beer?"*



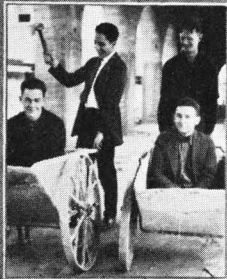
*"Ribbons"*



*"Horsie"*



*The Perambulator*



*Two Loads*



*The Girls*



*Joe's Gang*

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Have You Tried the *New Model*  
CORONA  
All Makes of Machines At All Prices.  
So. Calif. Dealers for the ROYAL  
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80 E. COLORADO, COR. RAYMOND

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We Do Our  
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**GOOD FELLOWS GRILL CAFE**

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*Sea Food Our Specialty*

PASADENA, CALIF.

Joe L.—I feel so natural today.

Dick—Why?

Joe—It's All Fools day.

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*an Institution in Southern California*

For years, the name “B. H. Dyas” has been synonymous with all that pertains to Sports and Athletics in Southern California.

Your Alma Mater has seen fit to make this Store its “source of Sports and Athletic Equipment.” Our earnest desire is to serve you, *individually*, in the same capacity.

**B.H.DYAS CO.**  
**7TH AT OLIVE**

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Estimates Given

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*"Makers of Good Window Shades"*

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IF YOU BUY IT AT



YOU'LL NEVER BE SORRY

He: Something is the matter with this car. I guess we'll have to stop.

She: Your clutch is slipping.

He: As soon as we stop I'll attend to that.

They say that a single oyster will lay from one to eight million eggs a year. Gosh! think of the married ones!

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LOS ANGELES



**Adler Collegian”  
Suits**

FOR THE YOUNG MAN

Four Price Groups  
\$30, \$35, \$40 and \$45

—The man who wants Quality, Style and Fit will not find a better value in Clothes than Adler Collegian Brand at our Special Low Prices. *We Save You Ten Dollars* on every suit purchased, regardless of the group you select from—Newest Styles, Handsome Fabrics and Perfect Tailoring—We are anxious to prove all this to you—soon!

**Army and Navy  
Dept. Store**  
530-36 SOUTH MAIN

Doc Bell: What do you expect to be when you get out of college?  
Frosh: An old man.

P. S.—I have just received the five dollars I owe you, but I have sealed the letter and can't get it in.

Now is the Time to Build Your  
PORTABLE SET FOR VACATION

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Test, for selection in any line.

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Both imported and domestic, which possess an air of swagger which cannot be duplicated in any but the best of tailoring.

Two, three and four-piece suits at forty-five to sixty-five dollars.

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PASADENA, CALIFORNIA

FOR THE MAN



WHO CARES



### THE REASON WHY

The policies, methods and manufacturing resources of the companies that make the shoes we sell to you enable us to sell you the highest grade shoe on the market at a low cost that astounds. Let us fit you today.

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CLOTHES *for* MEN  
WHO APPRECIATE  
QUALITY

*Mullen  
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LOS ANGELES  
HOLLYWOOD

“Here’s where I cut a good figure,” said the chorus girl as she sat upon the broken glass.

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CLOTHING

FURNISHINGS

Hill & Carden

STYLEPLUS CLOTHES

\$25    \$30    \$35

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NEAR UNION

*Two Hundred Two*

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Before or after graduation, Buy or Rent your Home from

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and also let them write your Insurance. I will guarantee their best services to you.



Sincerely Yours,

And Always for Caltech,

JACKSON W. KENDALL, C. I. T. '19.

The mate stuttered. The captain waxed irritable. Finally he cried to the mate, "If you can't say it, sing it!"

The mate sang:

"If old acquaintance be forgotten,  
Never brought to mind,  
The captain's wife fell overboard,  
She's thirty miles behind."

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GARVERS'

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DOLLAR 10<sup>6</sup> THEATRE

Try Our Drinking Fountains  
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HANK AMENT

Presents

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An Opaque Picture

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25 Beauties in

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"A Tennis Dance"

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Line will back up Hill  
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COLO. 10

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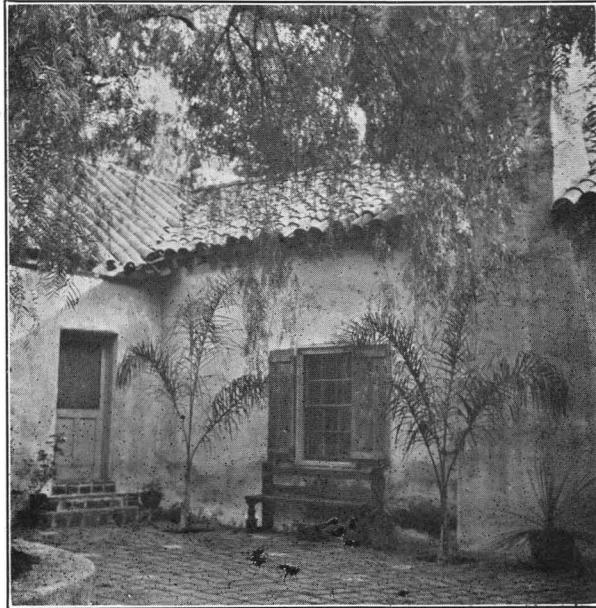
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Opposite  
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Los Angeles Office:  
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Los Angeles Phone 822-001



PASADENA is the residential city of a closely related group of cities which together constitute a great industrial, commercial and agricultural region.

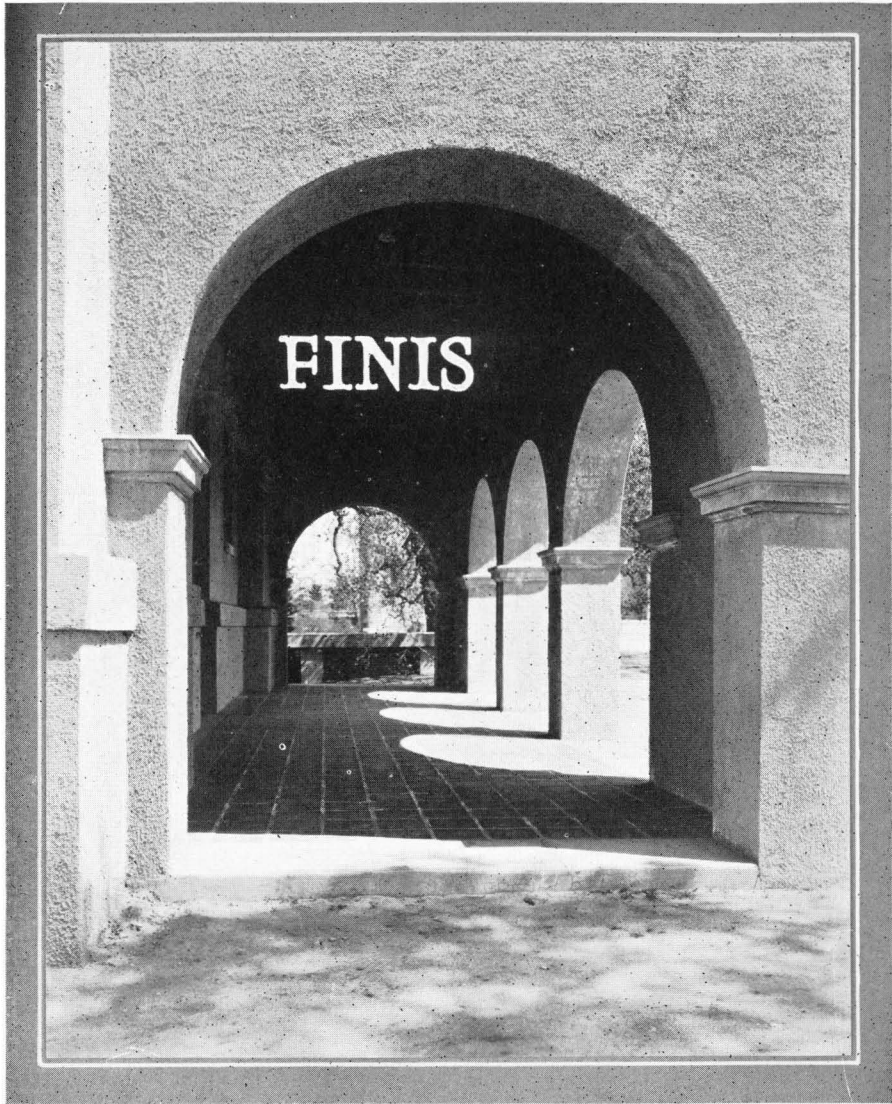
THIS region is developing more rapidly than any in the world.

IT CALLS for those young and vigorous men who will lead in the building of an empire unsurpassed.

PASADENA welcomes such men and offers them an ideal community life.

PASADENA CHAMBER OF COMMERCE  
AND CIVIC ASSOCIATION

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