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THE 1921 BIG "T"

THE BIG "T"

## THE 1921 BIG "T"

### THE BIG "T"

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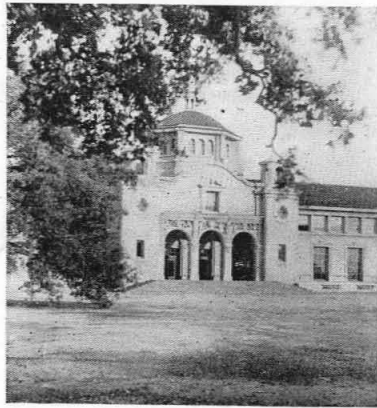
**A**T dawn, the first to sense the light of day, it  
rests up there,  
And at evening, in the purple pallor of the  
sunset, it stands out last,  
The Big "T."  
It's there for Truth and Time--a greater Tech--  
The noblest tradition of them all!

THE 1921 BIG "T"

# THE BIG "T"

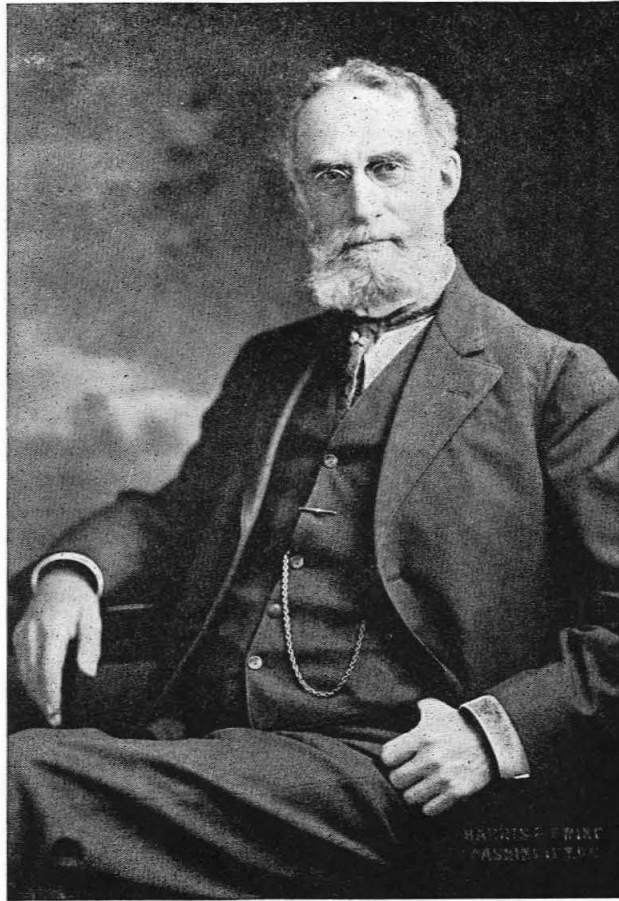
FOR 1920-1921

Being the Year Book of the California  
Institute of Technology.



Published by the Associated Student Body  
June 7, 1921.

THE 1921 BIG "T"



Dr. Norman Bridge

THE 1921 BIG "T"

TO

Dr. Norman Bridge

In deep appreciation of his oft-evidenced interest  
in the growth of the Institute, we  
respectfully dedicate  
this volume.

THE 1921 BIG "T"

In Memory



Earl H. Studebaker

Class of '24



The friends he made and left  
extol far more than  
idle words.

## THE 1921 BIG "T"

### FOREWORD.

**R**ELUCTANT though we have been in our decision to change the title of this year's Book from the somewhat well-established "Orange and White" to that of "The Big T," it has been done simply because we are not in accord with this, of late, altogether too persistent habit at Tech--this habit of transplanting traditions.

Local prep schools have the inalienable privilege of copying their year book titles from the University of California's "Blue and Gold."

It is not necessary to draw conclusions.

In the presentation of this volume, then, it is our hope that it will be taken (or left) as a stone in an ultimate monument of tradition which will be unequivocally of us and undeniably our own.

Our success is with you.

The Editor.



## THE BIG "T" BOARD.

Arthur J. Garfield  
Editor

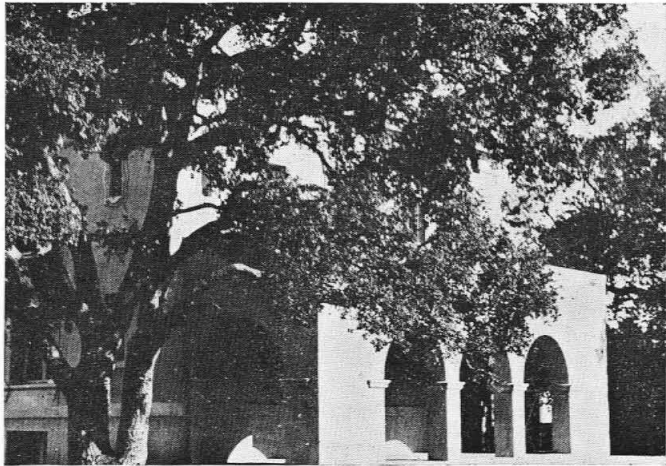
Manton M. Barnes  
Manager

Clyde R. Keith	-	-	-	Administration Editor
Sinclair Smith	-	-	-	Senior Class Editor
Douglas Stromsoe	-	-	-	College Year Editor
Howard G. Vesper	-	-	-	Organization Editor
Frederic A. Maurer	-	-	-	Athletic Editor
Robert Gillies	-	-	-	Humor Section Editor

## ORDER OF BOOKS

- Book I The Institute
- Book II The College Year
- Book III The Senior Class
- Book IV Organizations
- Book V Athletics
- Book VI Humor Section
- Book VII Our Advertisers

# THE 1921 BIG "T"



THE OAK BY THE CHEM. BUILDING

THE 1921 BIG "T"



**I** NSTITUTE

BOOK I

Clyde R. Keith  
Editor

THE 1921 BIG "T"

HAIL C. I. T.

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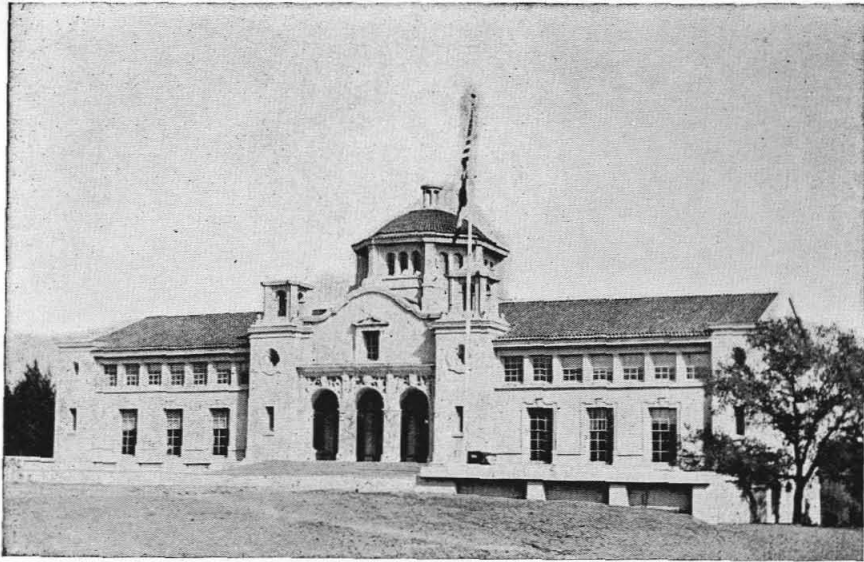
In Southern California  
In grace and splendor bound,  
Where the lofty mountain peaks  
Look out to plains beyond.

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, '21.

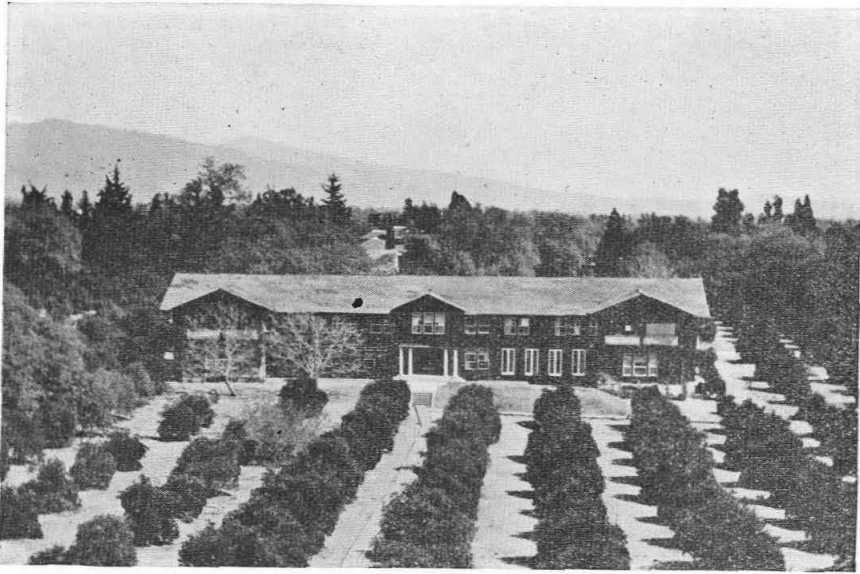
## THE 1921 BIG "T"



### THROOP HALL

*The oldest of the group of buildings on the C. I. T. campus. It contains the administrative offices, class rooms, drawing rooms, the assembly hall, and two of the electrical and mechanical engineering laboratories.*

## THE 1921 BIG "T"

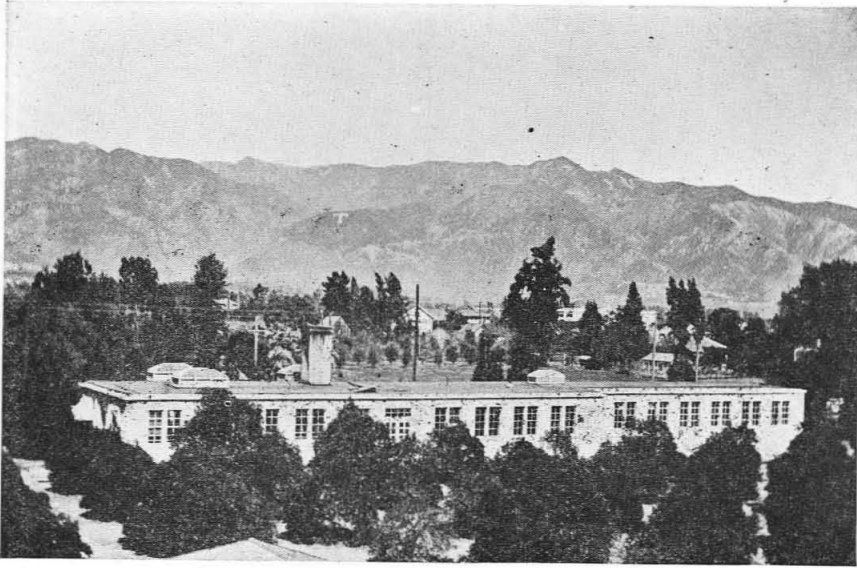


### THE DORMITORY

*A frame building of the California bungalow type, spacious, and picturesquely situated in the rear of the orange grove. This building forms the basis for much of the college life of the Institute.*

*It accommodates sixty men.*

## THE 1921 BIG "T"



### THE STEAM LABORATORY

*In this building is contained the equipment for experimental work in hydraulic and steam engineering. The wind tunnel, used in a number of experiments for the government during the war, is located at the east end of the structure and is numbered among the most valuable experimental apparatus owned by the Institute.*



## THE 1921 BIG "T"

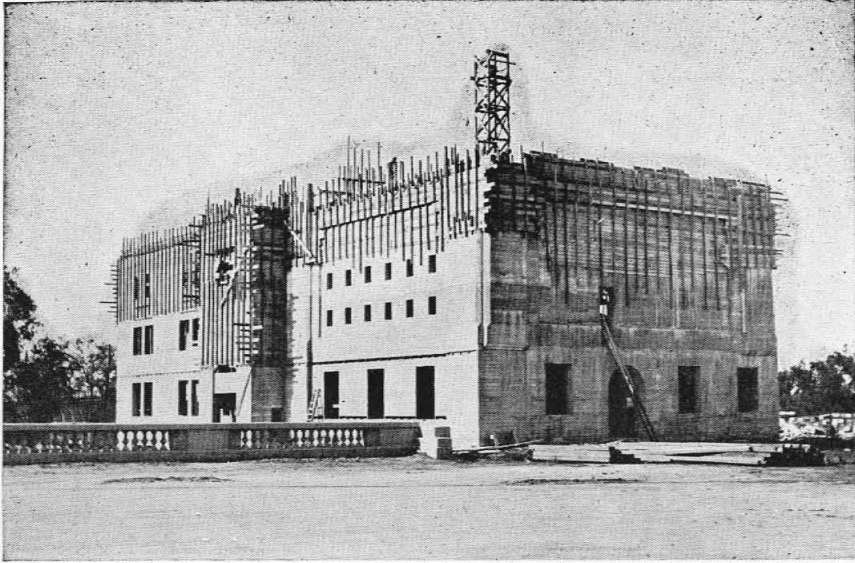


### THE GATES CHEMICAL LABORATORY

*The Chem Building was finished in 1917, and forms the first of additional structures to complete the ultimate campus arrangement.*

*It contains adequate under-graduate laboratories, classrooms, research laboratories, and a well-equipped scientific library.*

## THE 1921 BIG "T"



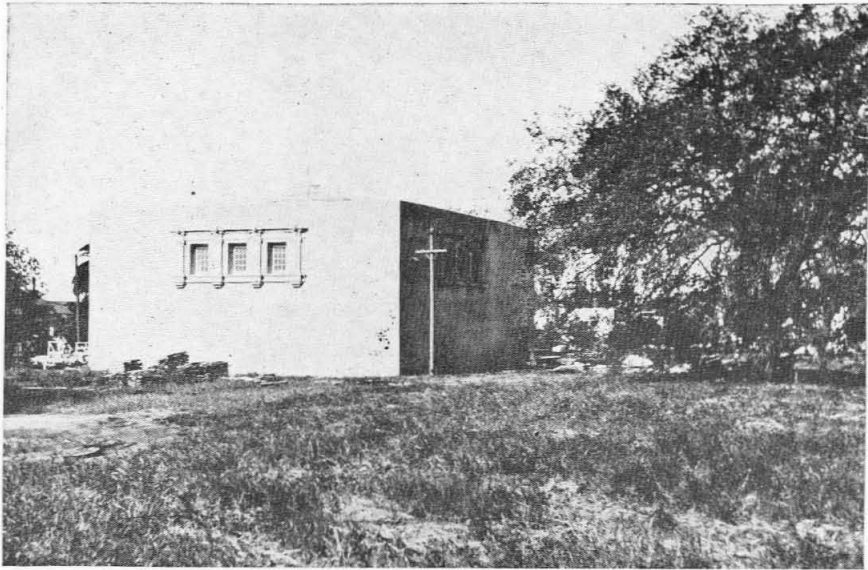
### THE BRIDGE PHYSICAL LABORATORY

*What is probably to be the most thoroughly equipped physical laboratory in the country is rapidly being erected across the campus from the Chem Building.*

*The architecture follows the general plan of the group and combines favorably the artistic, the stable and the utilitarian.*

*It should be finished in a few months.*

## THE 1921 BIG "T"



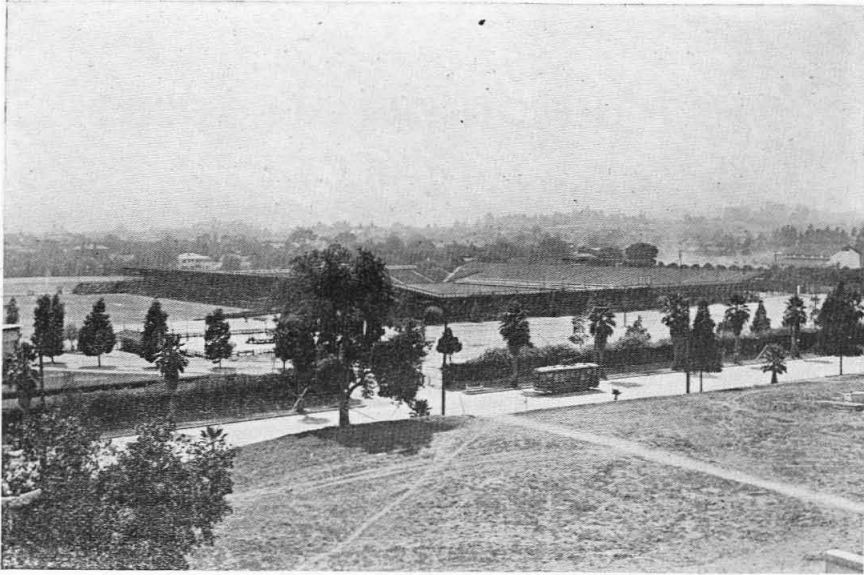
### AUDITORIUM EAST WING

*The second of the new, uncompleted structures on the Tech property is the East wing of the main auditorium.*

*It is to be used jointly with the Pasadena Music and Art Association for art exhibits, programs, assemblies and social gatherings.*

*It will be ready for use next fall.*

## THE 1921 BIG "T"



### THE ATHLETIC FIELD

*The athletic field equipment of Caltech approaches that of some of the largest universities in America in size, perfection and accommodation.*

*The football field is used in the annual East versus West football game on New Years Day.*

*South of this is the running track and baseball field, the former the scene of a number of important A. A. U. meets and the latter used annually by the Chicago Cubs in their spring practice.*

*Tech has grounds for successful athletic teams in the future.*

## WHAT THE OTHER HALF THINKS

*By Professor Clinton K. Judy*



THAT man who first said that the professor becomes dictatorial and intolerant through having his words submissively accepted by his students could not have known C. I. T. Some professors may once have expected to be listened to as the wise men they are, but that expectation was soon disappointed; the vague surviving hope, too, dwindled, and finally came the acceptance of the inevitable.

Freshmen, by some pleasant dispensation, do allow something to the professor, but they find out by the time they are sophomores that they have been unnecessarily considerate. Their game thereafter is to devote themselves to windy question and opposition which, hopefully, may so disarrange the academic gown as to discover feet of ordinary clay.

Well, the feet shamelessly uncovered look clay enough, and the insatiable student (O, sacred hunger of ambitious minds), the sophomore, tries to smash them.

Now the professor must save himself if he have salvation in him. He demonstrates that clay is common to all, that to step on others' toes is but a poor way to raise oneself. He alters his tone from the magisterial to the counseling, or shall one say conciliatory.

In the long run, that is, for him who can run for four years, the senior finds himself not sitting under an intolerant master, but walking up to the crossroads with a fellow human being, fellow man and fellow student.

THE 1921 BIG "T"

A D M I N I S T R A T I O N



THE 1921 BIG "T"



Dr. James A. B. Scherer

## THE 1921 BIG "T"

### PRESIDENT EMERITUS JAMES A. B. SCHERER



DOCTOR JAMES A. B. SCHERER, known and loved as the able President of the Institute since 1908, resigned September 11, 1920. Dr. Scherer's resignation was necessitated by the condition of his health resulting from the tremendous strain of his war work. He came to Throop in 1908 and in 1910 manipulated the transfer of the old foundation into Throop College of Technology. In 1920 he again engineered a change, this time to the California Institute of Technology of our knowledge. The twelve years of loyal and faithful service that Dr. Scherer gave to the Institute have been filled with notable achievements. During the war he was Chief of Travel Service, State Council Section, Council of National Defense. Dr. Scherer won for himself the respect and love of all who knew him. Not only is he noted as an author, critic, and speaker of reputation, but also as a very capable administrator.

The deep-set feeling with which Dr. Scherer is held by men of the Institute is evidenced by the following resolution which was adopted by them shortly after the opening of this year: "It now seems fitting that we, the students of the California Institute of Technology, express our deep regret at the loss we have sustained in your retirement from the Presidency of our institution. On leaving the Institute you go from us in person only, as your teachings, inspiration, loyalty, and good-fellowship shall live so long as our college exists.

"We can only wish you as great a success in your private life as you enjoyed in the Presidency of this institution, and we assure you that your name will live forever in the aims and achievements of California Institute of Technology."



## THE 1921 BIG "T"



PROF. FRANKLIN THOMAS



PROF. CLINTON K. JUDY

### Faculty Administrative Committees

**A**LTHOUGH handicapped by the lack of a president this year, the Institute administration has gone on with remarkable efficiency. Immediately after the resignation of Dr. Scherer, the Trustees appointed the Faculty Administrative Committee. The members of this committee are: Franklin Thomas, chairman, Edward C. Barrett, Arthur A. Noyes, Clinton K. Judy, and Harry C. Van Buskirk.

Their work has been the general administration of the educational affairs of the Institute. To Professor Franklin Thomas, chairman of the committee, is due much of the credit for this year's successful administration.

Professor Clinton K. Judy, Chairman of the Faculty, has also been quite prominent in the administration of Institute affairs. The Faculty has been so well organized through its officers and committees that their work has gone on this year without interruption.

The institute is exceptionally fortunate in having such men as Professor Judy and Professor Thomas as temporary executives in the affairs of the Institute.

# THE 1921 BIG "T"

## THE BOARD OF TRUSTEES

Arthur H. Fleming.....	President
Henry M. Robinson.....	First Vice-President
William C. Baker.....	Second Vice-President
John Wadsworth.....	Third Vice-President and Auditor
Edward C. Barrett.....	Secretary and Assistant Treasurer
William H. Vedder.....	Treasurer

Hiram W. Wadsworth, A. B.  
716 South El Molino Avenue.

Arthur H. Fleming  
1003 South Orange Grove Avenue.

George E. Hale, Sc.D., LL. D.  
South Pasadena.

Charles W. Gates,  
Fordyce, Arkansas.

Henry M. Robinson,  
195 South Grand Avenue.

William H. Vedder,  
Altadena.

John Wadsworth,  
90 South Grand Avenue.

William C. Baker,  
Providence, Rhode Island.

Tod Ford,  
257 South Grand Avenue.

R. C. Gillis,  
Los Angeles.

John D. Spreckels,  
San Diego.

J. H. Henry,  
1199 Oak Knoll Avenue.

R. R. Blacker,  
1177 Hillcrest Avenue.

Harry Chandler,  
Los Angeles.

Henry W. O'Melveny,  
Los Angeles.

### ADVISORY COUNCIL

John J. Carty, Vice-President, American Telegraph and Telephone Company.

Gano Dunn, President, J. G. White Corporation.

Frank B. Jewett, Chief Engineer, Western Electric Company.

John C. Merriam, President, Carnegie Institution of Washington.

Charles L. Reese, Chemical Director, E. I. du Pont de Nemours and Company.

## THE 1921 BIG "T"

### Officers of Instruction and Research

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

Director of Chemical Research

S.B., Massachusetts Institute of Technology, 1886; S.M., 1887; Ph.D., Leipsic, 1890; LL.D., University of Maine, 1908; Clark University, 1909; Sc.D., Harvard University, 1909; Yale University, 1913. Instructor, Assistant and Associate Professor of Chemistry, Massachusetts Institute of Technology, 1890-1899; Professor of Theoretical Chemistry, 1899-1913, and Director of Research Laboratory of Physical Chemistry, Massachusetts Institute of Technology, 1903-1919; Acting President, Massachusetts Institute of Technology, 1907-1909.

ROBERT ANDREWS MILLIKAN, Ph.D., Sc.D.

Director of Physical Research\*

A.B., Oberlin College, 1891; A.M., 1893; Ph.D., Columbia University, 1895; Universities of Berlin and Göttingen, 1895-1896; Sc.D., Oberlin College, 1911. Northwestern University, 1913; University of Pennsylvania, 1915. Tutor in Physics, Oberlin College, 1891-1893, Assistant, 1896, Associate, 1897; Instructor, 1899, Assistant Professor, 1901. Associate Professor, 1907-1910, and Professor of Physics, 1910—, University of Chicago.

LUCIEN HOWARD GILMORE, A.B.

Professor of Physics

A.B., Leland Stanford Junior University, 1894. Acting Assistant, Department of Physics, Leland Stanford Junior University, 1894-1895.

CLINTON KELLY JUDY, M.A.

Professor of English Language and Literature

A.B., University of California, 1902; M.A., 1907; B.A., Oxford University, 1909; M. A., 1913; M.A., Harvard University, 1917.

ROYAL WASSON SORENSEN, S.B. in E.E.

Professor of Electrical Engineering

B.S. in Electrical Engineering, University of Colorado, 1905. Associated with General Electric Co., Schenectady, N. Y., and Pittsfield, Mass., 1905-1910; Consulting Engineer, Pacific Light and Power Corporation, 1913-1917.

\*By co-operative arrangement with the University of Chicago.

STUART JEFFERY BATES, Ph.D.

Professor of Physical Chemistry

B.A., McMaster University, Toronto, 1907; M.A., 1909; Ph.D., University of Illinois, 1912. Chemist, Comfort Soap Works, Toronto, 1907-1908; Research Assistant, McMaster University, 1909-1910; Fellow in Chemistry, University of Illinois, 1910-1912; Research Associate in Physical Chemistry, 1912-1913. Instructor in Analytical Chemistry, University of Illinois, 1913-1914.

## THE 1921 BIG "T"

FRANKLIN THOMAS, C.E.

Professor of Civil Engineering

B.E., University of Iowa, 1908; C.E., 1913. Graduate work at McGill University, Montreal. Instructor in Descriptive Geometry and Drawing, University of Michigan, 1910-1912. Construction Foreman, Mines Power Company, Cobalt, Ontario, 1909-1910; Designer, Alabama Power Company, Birmingham, Alabama, 1912-1913. Assistant Engineer, U. S. Reclamation Service, 1919.

HARRY CLARK VAN RUSKIRK, Ph.B.

Professor of Mathematics

Ph.B., Cornell University, 1897.

HARRY BATEMAN, Ph.D.

Professor of Mathematical Physics and Aeronautical Research

B.A., Cambridge University, 1903; Universities of Gottingen and Paris, 1905-1906; M.A., Cambridge University, 1906 Ph.D., Johns Hopkins University, 1913. Lecturer in Mathematics, University of Liverpool, 1906-1907; Reader in Mathematical Physics, University of Manchester, 1907-1910; Lecturer in Mathematics, Bryn Mawr College, 1910-1912; Lecturer in Applied Mathematics, Johns Hopkins University, 1915-1917.

W. HOWARD CLAPP, E.M.

Professor of Mechanism and Machine Design

E.M., University of Minnesota, 1901. Instructor in Mathematics, Macalester College, 1897-1898. Superintendent and Designing Engineer, Sherman Engineering Company, Salt Lake City, 1905-1909; Superintendent, Nevada-Goldfield Reduction Company, Goldfield, Nevada, 1909-1910.

JAMES EDGAR BELL, Ph.D.

Professor of Chemistry

S.B., University of Chicago, 1905; Ph.D., University of Illinois, 1913. Graduate student and fellow, University of Chicago, 1908-1910; Graduate student and assistant, University of Illinois, 1911-1913; Instructor in Chemistry, University of Washington, 1910-1911, 1913-1916.

ROBERT L. DAUGHERTY, A.B., M.E.

Professor of Mechanical and Hydraulic Engineering

A.B. in Mechanical Engineering, Leland Stanford Junior University, 1909; M.E. 1914; Assistant in Mechanics, Leland Stanford Junior University, 1907-1908; Assistant in Hydraulics, 1908-1909; Instructor in Mechanical Engineering, 1909-1910; Assistant Professor of Hydraulics, Sibley College, Cornell University, 1910-1916; Professor of Hydraulic Engineering, Rensselaer Polytechnic Institute, 1916-1919.

PAUL PERIGORD, M.A.

Professor of Economics and European History

B.A., University of France, 1901; B.Ph., 1902; M.A., University of Chicago, 1911; M.A., Columbia University, 1913. Member of French High Commission to the United States, 1918-1919.

## THE 1921 BIG "T"

### HANS KRAMER, Captain

Corps of Engineers, U. S. Army

Professor of Military Science and Tactics

Student, University of Michigan, 1912-1913; graduate, U. S. Military Academy, West Point, with rank of Second Lieutenant, Corps of Engineers, 1918. Camp Adjutant, Camp Leach, D.C., 1918. Student, The Engineer School, Camp A. A. Humphreys, Virginia, 1919-1920. With American Expeditionary Forces and American Forces in Germany, 1919. Adjutant, Engineer R. O. T.C. Camp, Camp A. A. Humphreys, Virginia, 1920

### HOWARD JOHNSON LUCAS, M.A.

Associate Professor of Organic Chemistry

B.A., Ohio State University, 1907; M.A., 1908; Assistant in Organic Chemistry, Ohio State University, 1907-1909; Fellow in Chemistry, University of Chicago, 1909-1910; Chemist, Bureau of Chemistry, United States Department of Agriculture, 1910-1912. Chemist, Government of Porto Rico, 1912-1913.

### GEORGE RUPERT MAC MINN, A.B.

Associate Professor of English Language and Literature

A.B., Brown University, 1905. Instructor in English, Brown University, 1907-1909; Instructor in English, Iowa State College, 1909-1910; Instructor in English, University of California, 1910-1918. Manager of the University of California Press, 1912-1913.

### LUTHER EWING WEAR, Ph.D.

Associate Professor of Mathematics

A.B., Cumberland University, 1902; Ph.D., Johns Hopkins University, 1913. Graduate student and fellow, Johns Hopkins University, 1908-1909, 1910-1913. Instructor in Mathematics, University of Washington, 1913-1918.

### WILLIAM WHIPPLE MICHAEL, B.S.

Associate Professor of Civil Engineering

B.S. in Civil Engineering, Tufts College, 1909. With New York City on topographic surveys, 1909-1911; with The J. G. White Engineering Corporation, 1912-1913 and 1915; Instructor, Department of Drawing and Design, Michigan Agricultural College, 1914; with The Power Construction Company of Massachusetts, 1914-1915; in private practice, 1916-1918.

### 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; Assistant in Chemistry, University of California, 1912-1915; Research Chemist for Giant Powder Co., San Francisco, 1915; Research Associate, Massachusetts Institute of Technology, 1916.

### EARNEST CHARLES WATSON, Ph.B.

Ph.B., Lafayette College, 1914; Scholar in Physics, University of Chicago, 1914-1915; Assistant in Physics, University of Chicago, 1915-1917; Government Research on Submarine Detection, Naval Experiment Station, 1918.

## THE 1921 BIG "T"

### JOHN ROBERTSON MACARTHUR, Ph.D.

Professor of English

B.A., University of Manitoba, 1892; Ph.D., University of Chicago, 1903. Lecturer in Modern Languages, Manitoba College, 1893-1898; Professor of English, New Mexico Agricultural College, 1903-1910, 1911-19-13; Professor of English, Kansas State Agricultural College, 1914-1920.

### GEORGE FORSTER, E.E.

Assistant Professor of Electrical Engineering

E.E., Lehigh University, 1914. With General Electric Company, Schenectady N. Y., and Pittsfield, Mass., 1914-1915; Assistant Electrical Engineer, Delaware & Hudson Co., Coal Department, Scranton, Pennsylvania, 1915-1916; Engineering Assistant, Philadelphia Electric Company, Philadelphia, Pennsylvania, 1918-1919.

### ROMEO RAOUL MARTEI, S.B.

Assistant Professor of Civil Engineering

S.B., Brown University, 1912. Instructor in Civil Engineering, Rhode Island State College, 1913-1914; Instructor in Civil Engineering, Mechanics Institute, 1914-1915. With Sayles Finishing Plants, Saylesville, R. I., 1915-1918; with Atchison, Topeka and Santa Fe Railway, Amarillo, Texas, 1918.

### WALTER TICKNOR WHITNEY, Ph.D.

Assistant Professor of Physics

B.S., Pomona College, 1910; M.S., 1912; Ph.D., University of Chicago, 1916. Fellow in Physics, University of Chicago, 1914-1916.

### FREDERIC W. HINRICHS, JR., A.B.

Assistant Professor of Mechanics

A.B., Columbia University, 1902. Graduate of the United States Military Academy, West Point, 1902. Served as an officer of the U. S. Army in the Artillery Corps, Coast Artillery Corps, and Ordnance Department, 1902-1910; retired in 1910 with rank of Captain. Assistant Professor, Professor of Applied Mechanics, University of Rochester, 1910-1919. Captain, Major, Lieutenant-Colonel, Ordnance Department, U. S. A., 1917-1919. Retired to permanent grade of Captain, U. S. A., Retired, 1919.

### SAMUEL ALFRED TENISON, B.S.

Assistant Professor of Physical Education

B.S., James Millikin University, 1914. Instructor in Commercial Subjects, and Athletic Director, Junior High School, Butte, Montana, 1915-1916. Student, Springfield College, Springfield, Massachusetts, 1916-1917. Director of Physical Education, State Normal School, Stevens Point, Wisconsin, 1918-1920.

### RAYMOND FULLER CALL, B.S.

Assistant Professor of Physical Education

B.S., Throop College of Technology, 1915. Instructor, Ventura High School, 1915-1917.

## THE 1921 BIG "T"

DELWIN HAROLD SILVIUS, JR., M.A.

Assistant Professor of Scientific German

B.A., Northwestern University, 1912; M.A., Harvard University, 1913. Professor of Modern Languages, Westminster College, 1913-1915. Interpreter and Translator, American Expeditionary Forces, 1918-1919.

\*Resigned, December, 1920.

JAMES HAWES ELLIS, Ph.D.

Research Associate in Physical Chemistry

B.S., Massachusetts Institute of Technology, 1912; Ph.D., 1916. Assistant in Electrical Laboratory, Massachusetts Institute of Technology, 1913-1914; Research Associate in Physical Chemistry, Research Laboratory of Physical Chemistry, Massachusetts Institute of Technology, 1914-1916.

ROSCOE GILKEY DICKINSON, Ph.D.

Research Associate in Physical Chemistry

National Research Fellow

S.B., Massachusetts Institute of Technology, 1915; Ph.D., California Institute of Technology, 1920. Assistant in Theoretical Chemistry, Massachusetts Institute of Technology, 1915-1916; Research Assistant in Physical Chemistry, Research Laboratory of Physical Chemistry, Massachusetts Institute of Technology, 1916-1917.

ALBERT ADAMS MERRILL

Research Associate in Aeronautics

EDWARD CECIL BARRETT, B.A.

Lecturer in Business Law

B.A., State University of Iowa, 1906. Assistant Secretary, Board of Regents, 1906-1907; Registrar and Secretary to the President, State University of Iowa, 1907-1911.

WILLIAM NOEL BIRCHBY, M.A.

Instructor in Mathematics

A.B., Hope College, 1899; M.A., Colorado College, 1905. Instructor, Colorado College, 1905 and 1907; Instructor in Physics, University of Southern California, summer session, 1916.

WILLIAM JACOB AUBURN, M.E.

Instructor in Engineering Drawing

M.E., Cornell University, 1897. With Westinghouse Machine Company, Pittsburgh, Pennsylvania, 1898-1914; with United Engineering and Foundry Company, Pittsburgh, Pennsylvania, 1914-1916.

HOXSIE YOST SMITH, B.S.

Instructor in Engineering Drawing

B.S. in Electrical Engineering, George Washington University, 1910. Associated with the Northwestern Telephone Company, St. Paul, 1913-1916; with Arthur R. Kelley, Consulting Engineer, San Francisco, 1916-1918; California State Railroad Commission, 1918.

## THE 1921 BIG "T"

FRANCIS WILLIAM MAXSTADT, M.E. (E.E.)

Instructor in Mechanical Engineering

M.E., Cornell University, 1916; Certificate of E.E., 1916, Draftsman and Designer, Otis Elevator Company, 1916-1917. Assistant in the Electrical Research Division, Interborough Rapid Transit Company, 1917-19-19. Assistant in the Thomas A. Edison Laboratories, 1919.

ERNEST HAYWOOD SWIFT, M.S.

Instructor in Analytical Chemistry

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

FRED LLOYD POOLE, M.S.

Instructor in Electrical Engineering

B.S. in Electrical Engineering, Throop College of Technology, 1917; M.S. in Electrical Engineering, Union College, 1919. With General Electric Company, Schenectady, New York, Atlanta, Georgia, and San Francisco, California, 1917-1920.

CLYDE WOLFE, Ph.D.

Instructor in Mathematics

B.S., Occidental College, 1906; M.S., 1907; A.M., Harvard University, 1908; Ph.D., University of California, 1919. Harvard University, 1908-1910. Surveyor, Western States, 1910-1912. Acting Professor of Physics, Occidental College, 1912-1916; Associate Professor of Mathematics, 1916-1917. Teaching Fellow in Mathematics, University of California, 1917-1919. Dean, Santa Rosa Junior College, 1919-1920.

GLENN H. BOWLUS, B.S.

Instructor in Mechanical Engineering

B.S. in Electrical Engineering, Purdue University, 1912. With Southern California Edison Company, Los Angeles, 1912-1917; Wright Martin Aircraft Corporation, Los Angeles, 1917; Designer, Bedell Engineering Company, Los Angeles, 1918, Chief Draftsman, General Petroleum Corporation, 1919-1920.

JAMES B. FRIAUF, A.B.

Instructor in Physics

A.B., University of Montana, 1918. Assistant in Physics, University of Chicago, 1919-1920.

FRED J. CONVERSE, B.S.

Instructor in Civil Engineering

B.S. in Mechanical Engineering, University of Rochester, 1914. With Cleveland Electric Illuminating Company, Cleveland, Ohio, 1914-1915. With General Electric Company, Lynn, Massachusetts, 1915-1916. Instructor in Applied Mechanics, University of Rochester, 1916-1917. With General Laboratories, Bureau of Aircraft Production, U. S. A., 1917-1918. With Gleason Gear Works, Rochester, New York, 1919. Designer, Bureau of Power and Light, Los Angeles City, 1920.



## THE 1921 BIG "T"

CARL JOSEPH BERGMAN, M.A.

Instructor in Scientific German

B.A., Augustana College, 1910; M.A., University of Illinois, 1911. Teacher of French and German, Rockford (Illinois) High School, 1911-1920.

WALTER WILLIAMS OGIER, B.S.

Acting Instructor in Engineering Drawing

B.S., Throop College of Technology, 1919. With Signal Department, Pacific Electric Railway, 1919-1920.

WALTER WILLIAM MARTIN

Instructor in Wood Working (Part Time)

Graduate, Normal Arts Department, Throop Polytechnic Institute, 1900. With Stout Planing Mills, Pomona, California, 1891-1896.

ARTHUR FREDERICK HALL

Instructor in Pattern Making and Machine Shop Practice (Part Time)

With Sullivan Machine Company, Claremont, N. H., 1891-1894; B. F. Sturdevant Company, Jamaica Plain, Mass., 1894-1897; Union Gas Engine Company, San Francisco, 1898--1899; W. P. Kidder Machine Company, Jamaica Plain, Mass., 1899-1907.

\*Associated with the Pasadena High School.

RUSSELL MORLEY OTIS, B.S.

Research Fellow in Physics

B.S., California Institute of Technology, 1920.

RICHARD MILTON BOZORTH, A.B.

Teaching Fellow in Chemistry

A.B., Reed College, June, 1917.

ROBERT STUART BOLAN, M.S.

Teaching Fellow in Chemistry

B.S., Massachusetts Institute of Technology, 1919; M.S., University of Pennsylvania, 1920.

EDWIN PAYNE COX, B.S.

Teaching Fellow in Chemistry

B.S., University of Oregon, 1920.

DAVID FREDERICK SMITH, S.B.

Teaching Fellow in Chemistry

B.S., California Institute of Technology, 1920.

ROBERT GROOS WULFF, B.A.

Teaching Fellow in Chemistry

B.A., University of Texas, 1919.

## THE 1921 BIG "T"

EMIL DURBIN RIES, S.B.  
Teaching Fellow in Chemistry  
S.B., University of Chicago, 1920.

GEORGE CHRISTIAN HENRY, A.B.  
Teaching Fellow in Physics  
A.B., Reed College, 1920

FRANK J. HILL  
Teaching Fellow in Physics

ARTHUR WELLS SINCLAIR  
Laboratory Assistant in Physics  
Student in Mechanical Engineering, Cornell University, 1905-1909. With Atchison, Topeka and Santa Fe Railway, 1914. With Southern Edison Company, 1915-1918.

EDWARD KUHNHARDT WARREN, A.B.  
Assistant in Chemistry  
A.B., Harvard University, 1920.

RAYMOND WELLINGTON AGER  
Assistant in Mechanical Engineering  
California Institute of Technology, Class of 1921.

EDWARD GALBRAITH FORGY  
Assistant in Mechanical Engineering  
California Institute of Technology, Class of 1921.

FRED C. HENSON  
Instrument Maker, Department of Chemistry

JULIUS PEARSON  
Instrument Maker, Department of Physics

FRANCES HALSEY SPINING  
Librarian

Joseph Laracy, Master Sergeant, Engineers, U. S. Army  
Assistant, Department of Military Science and Tactics

William M. Pounds, Sergeant, Infantry, U. S. Army  
Assistant, Department of Military Science and Tactics

William C. Cook, Regimental Commissary Sergeant, Field Artillery,  
U. S. Army, Retired  
Supply Sergeant, Department of Military Science and Tactics

Louis H. Baily, Staff Sergeant, Engineers, U. S. Army  
Assistant, Department Military Science and Tactics.

### ASSOCIATES

ALBERT ABRAHAM MICHELSON, Ph.D., LL.D., Sc.D.  
Research Associate in Physics  
ALFRED NOYES, Litt.D.  
Lecturer in English Literature

## THE 1921 BIG "T"

### A BRIEF HISTORY OF THE INSTITUTE

Throop Polytechnic Institute founded in 1891 by Amos G. Throop.

Throop College of Technology, under new foundation, 1908.

New buildings on present campus occupied in 1910.

First issue of the Tech, 1913.

Tech Dormitory appeared on campus in 1915.

Freshman-Sophomore Pole Rush inaugurated in 1915.

Big T laid out and cleared off, December, 1915.

First issue of the Throop Tech weekly newspaper, 1918.

First Engineer unit of R. O. T. C. established, 1916.

New Chemistry building erected in 1917 to take care of rapid growth.

War Laboratory built in 1917 as part of college war program.

New buildings of California Institute of Technology started, 1920.

THE 1921 BIG "T"



# College Year

BOOK II

Douglas A. Stromsoe  
Editor

## COMMENCEMENT



THE graduation exercises of the Class of 1920 marked a new era in the history of the Institute. Not only was this the largest Senior class up to that time, being the first regular graduating class since 1917, but it was also the first class to graduate under the Institute's new name.

It was on the afternoon of June 13, 1920, that the friends and relatives of the members of the Class of 1920 gathered in front of the Gates Chemical Laboratory for the exercises. After the singing of "America" by the assemblage, Rev. Leslie E. Learned gave the Chaplain's address.

Following this, Malcolm Macurda rendered a very excellent violincello solo. Then came the address by Dr. George Ellery Hale, which will long be remembered by all who heard it. His subject was "Scientific Research as the Foundation of Engineering Education and Industrial Development."

The first degree of Doctor of Philosophy ever given by the Institute was awarded to Roscoe Gilkey Dickinson. Day Ehrenfeld, Howard Domer Hoenshel and Ernest Haywood Swift were awarded the degree of Master of Science. The following men received the degree of Bachelor of Science: Hartwick Mitchell Barnes, Paul David Barton, Virgil Holmes Best, Warren L. Bueschlein, Alfio Bissiri, James Robert Black, Bruce Burns, George Lewis Cory, Paul Newman Crosby, Elbridge Alvah Goodhue, Abraham Lincoln Hollinger, Jr., Edward Victor Hounsell, Theron Colwell Hounsell, Harvey Walter House, Walter Allen Keith, John Clark Lewis, Harold Ralph Linhoff, Frank Reid Mosher, Russell Morley Otis, Ivan Leroy Payne, William Clothworthy Renshaw, Roscoe Rolland Rockafeld, Mark Sawyer, David Frederick Smith, Donald DeWitt Smith, Robert Carson Smith, Harry Prentice St. Clair, George Otto Suman, Lloyd Ensign Towne, James Raymond Wilson, Roscoe Errett Woodbury.

## THE 1921 BIG "T"

### FRESHMAN-SOPHOMORE POLE RUSH



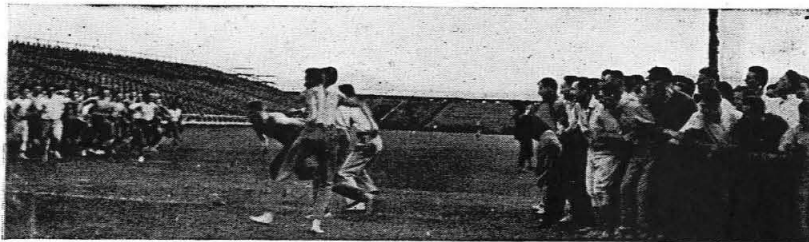
The Pole Rush at Tech has always been looked forward to with a great deal of enthusiasm and interest. This year was no exception, as the classes of '23 and '24 had just as many instinctive grievances against each other as Freshman and Sophomore classes always have. It was decided to "fight it out" on Wednesday afternoon, October 12, upon the turf of Tournament Park.

The day finally arrived, and great was the excitement among the lower-classmen. The zero hour was set at three o'clock, but the contesting "mobs" were on the field long before the appointed time. Axle grease was used quite promiscuously in "fixing" the pole, and all was in readiness for the

Scrubs, who came on the field in a body which to the defenders looked like a battalion of well-trained reserves. The Freshmen formed a huge wedge and the Sophomores grouped themselves around the pole as thickly as their numbers would allow.

At three o'clock sharp, Ray Call started the fracas with a shot from his little pop gun. Then for twenty long minutes the spectators saw innumerable wounded pulling themselves or being pulled from beneath that struggling mass of greasy humans. For a while it looked as if the Frosh would come out on top, but as the minutes dragged on the Sophs seemed to be taking care of the youngsters very well. The Freshmen did manage to reach the bit of canvas once or twice, but it was all of no avail, and when the final gun boomed the Class of '23 had the struggle well in hand.

The penalty paid by the losers to the winning Sophs was a dance at the Hotel Green, to which the whole student body was invited. Although it was a big job to defeat the sturdy young 'uns, the Sophomores say the dance was decidedly worth the effort.



THE CHARGE

# THE 1921 BIG "T"

## BIG "T" PARTY

They went clambering up the mountain  
They climbed and climbed with glee,  
With shovels, picks, and axes,  
On their way to clean the "T."

They picked the gnarled stumps away  
And rolled them down the hill.  
They also felled the weeds nearby,  
And threw them on the fill.

They came sliding down the mountain,  
The class of Twenty-four,  
And now the "T" looks cleaner  
Than it's ever looked before.



CLEANING OFF LETTER  
ON MOUNTAIN

The annual "T" party was held on Saturday, December 11. Early in the morning many ambitious members of the class of '24 had left the toll house and by nine o'clock the majority of the class were hard at work on the mountain side.

Due perhaps to the lack of shovels and picks, others contented themselves with shouting encouragement and superfluous commands from the top and less precipitous slope of the "T."

However, this superabundant group of "bosses" considered themselves essential enough so that when the job was finally voted o. k. they were as tired and self-satisfied as any.

The "Big T" on Mt. Wilson is one of Tech's best known traditions. Until December 25, 1915, it was only an idea, but on that day the entire college under the leadership of Professors Clapp and Van Buskirk took the day off and cleared some seventy thousand square feet of mountainside from its covering of greasewood, cactus, manzanita, and brush. The "T" then measured 300 feet across the top and was 400 feet long. A few weeks later, after an unusually heavy snowfall had covered the "T" and had shown it forth to all between Pasadena and Signal Hill, the men again climbed past Henniger's Flat and removed more of the beauty of nature, this time giving the "T" its present block form. Since that time it has been the duty—and pleasure—of all the new men in college to take a day off during the first term and make the pilgrimage to "Mecca" that the "Big T" shall stand forth clean, a lasting emblem of the spirit of California Tech.

## THE 1921 BIG "T"

### FOOTBALL BANQUET

When the first annual football banquet was given at Throop, the contemplated absence of a single faculty or student body member was almost enough to cause its postponement. At that time, in 1914, the Tech office was just large enough for the "crowd."

This year's banquet, which was held at the I. O. O. F. Hall on December 10, was the best attended of any, with the exception of the one in 1918, during the S. A. T. C. Fully 225 men—professors, students, alumni—came to pay their respects to the team. The team members themselves were there in all their glory.

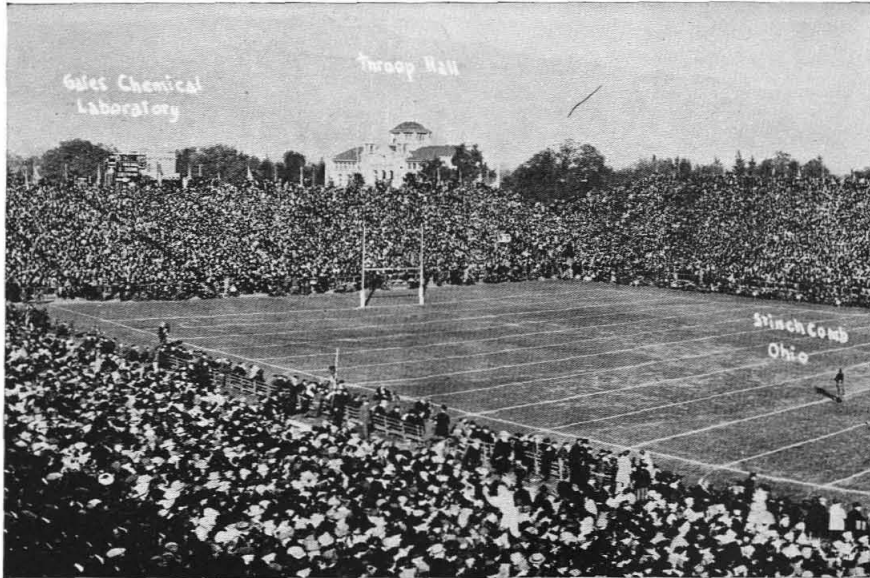
Some of the men could not refrain from tossing bouquets to their heroes, and before the speeches came most of the table decorations were far from where they started the evening.

For the first time in the history of the Institute sweaters were presented to the letter men.

### CALIFORNIA-OHIO GAME

On January 1, 1921, the California Tech campus was host to a big part of the tremendous crowd that came to witness the annual East vs. West football game.

The California "sup er-men" won a clean-cut victory and proved themselves the strongest gridiron team in the country.





## THE 1921 BIG "T"

### COLTON CEMENT PLANT TRIP

On March first the Juniors and Seniors went on a tour of inspection of the cement works at Colton and Crestmore, and the pre-cooling plant at San Bernardino.

The first stop was made at Crestmore where Dr. Lacey gave a lecture on the process of cement manufacture at the Riverside Portland Cement Co. Time did not permit the visiting of the interior of the plant, but the general layout was viewed from the side of an adjacent hill.

The trip was then continued on to Colton, everyone arriving there by noon. After lunch the superintendent gave a lecture on the process of the California Portland Cement Co. He explained some of the machines and gave the men an idea what to look for in going through the plant. He then conducted them through the plant, from the quarry to the sacking machines.

About two-thirty the upperclassmen continued on to the pre-cooling plant at San Bernardino. In this process cars containing the food products are run into compartments and subjected to cold air under pressure for four hours, bringing the temperature down to about forty degrees. Treated in this manner food products require less ice in shipping and keep longer.

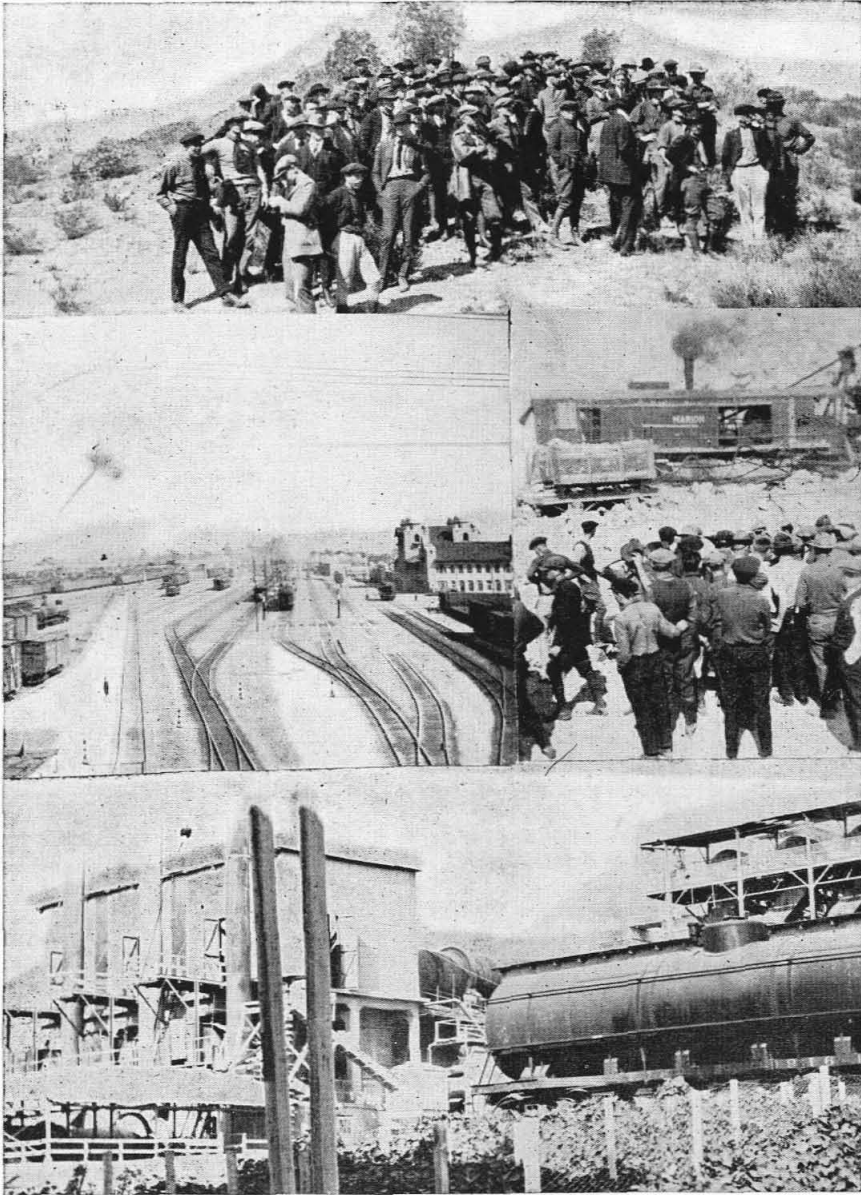
The machines and men stood up well under the long grind and every one had a better idea of cement manufacture at the end of the day.

### JUNIOR INSPECTION TRIP

The week of May 16 seemed to be "Inspection Trip Week" for the upperclassmen, so the Junior Civil Engineers undertook a trip on their own initiative the day following the aqueduct inspection trip. This time they visited the Pasadena City Sewer Farm in San Gabriel. The trip was a part of the course in Sewerage, required of the Civils. The ways and means in which Pasadena disposes of its sewage, although not a pleasant subject, is one of great importance and necessity.

The fellows had the good luck of having Mr. Demey, City Engineer, as a guide through the plant. Two methods are being used by Pasadena, by the Imhoff tank method and the Cameron type tank. The latter was much the larger of the two but less efficient. Little labor and time are required in the actual disposal of the sewage, when working properly, and it is therefore not a mean job, as many are led to believe. Although the trip was not of the most pleasant sort it was highly instructive and helpful in their work.

# THE 1921 BIG "T"



THE CEMENT PLANT TRIP

## THE 1921 BIG "T"

### SENIOR DITCH DAY

On the twelfth of May, the Institute halls were woefully perturbed—solemn dignity had vanished.

Someone then found the following placard, which said much and proved a little.

KNOW YE:

*That Whereas We*, the Class of 1921, have labored long, faithfully, and true under the domination of a case-hardened faculty;

*And That Whereas* spring has come, and with it has come, also, a feeling of great unrest, a feeling of discontent, a feeling of perpetual lassitude and ennui which cannot be banished by classroom logic;

*And That Whereas* it is meet and proper for kindred souls so afflicted to gather together, so that by recreation and enjoyment of nature we may better withstand the rigorous requirements of the *ultimo mensis*, and so that by a decent association with one another we may form a group of men capable of withstanding the tempestuous winds of fate which seek to scatter us upon our commencement day;

*And That Whereas* the Lord when his work of creation was almost finished, rested upon the Seventh Day, thus

*Be It Ordained and Decreed* that this Twelfth Day of May, Nineteen Hundred and Twenty-one, be a *Day of Rest* and the *Senior Ditch Day* of the Class of 1921, and

*Be It Further Ordained and Decreed* that this Day be dedicated to the relaxation, amusement, and recreation of the Class of Nineteen Hundred and Twenty-one, in any manner in which is may decide;

*And Further* that this Day be passed on to the Senior Classes of years to come as a *tradition* to be kept, guarded, and cherished, faithfully and well.

*So Be It.*

THE CLASS OF NINETEEN TWENTY-ONE.

The next day—or was it that night—the wayward group returned.

Good authority claims they had visited the wicked "wilds" of Ocean Park.

Many were sunburned, others were tired, but the prevalent opinion claimed a more satisfactory "inspection trip" than any planned by the authorities—and as a tradition it will probably remain for a long time to come.

## THE 1921 BIG "T"

### POWER PLANT INSPECTION TRIP

On the seventeenth of May the Junior Classmen who had been doing time in Professor Daugherty's "pipe" courses, sought to enlighten themselves as to the practicability of water machinery and took the day off for a personally conducted trip to power houses numbers one and two on the Los Angeles aqueduct.

The first stop was at the San Fernando reservoir. Here the men inspected the large earth-filled dam, the intake tower and the spillway.

The next stop was at the "rapids" and then the party set out on up through the Newhall Tunnel to Dry Lake where the floating weir was investigated.

The power houses were next visited and first hand information was acquired concerning these remarkable generating stations. Number one was the first inspected, and uses three units, having the possibility of increasing to six in the near future. The turbines are of the impulse type and are operated under a head of about nine hundred feet.

The entire water of the aqueduct passes through both stations. At Number Two reaction turbines are used and operated under a head of about five hundred feet. Two units are being used at the present time and seem adequate enough for the immediate future.

A good deal of rain and mud was encountered on the trip; nevertheless, those interested in the big engineering projects of this locality are satisfied and firmly convinced that the trip had been thoroughly well worth while.

### PRESS CLUB INITIATION

Just prior to the spring vacation six Tech "literary celebrities" received notice that they might have the honor of joining the Press Club if they would undertake to edit a special edition of the Tech. It was made plain then and eventually that the issue was to be in the order of a "razz" sheet.

At their first meeting the initiates chose Quirnbach to lead them in the project. The other unfortunates were Hambrook, Klein, Barnes, Benioff, and Varney.

On Tuesday, April 5, the result of their labors, "The Hot Rivet," made its first appearance. The din of a boiler factory was utter silence to the noise they made in marketing it, at one "jit" per copy.

All had been kept quiet, so the flaming sheet created quite a stir. Very few persons escaped unscathed in the broadcast iconoclastic destruction the paper dealt out.

Even the initiates were required to handle the copies with asbestos mittens, thus insuring their own safety.

That same evening they attended their first meeting with the Press Club, at the home of Prof. MacMinn. The initiation was ended by their giving several original readings and skits.

Thus were six members added to the roster of the newly formed Press Club.

## THE 1921 BIG "T"

### VERSE LIBRE

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Insolent Eyes  
A broken promise  
A tinkling cowbell on an October afternoon  
Mountain Springs  
Not lips  
Insolent eyes  
A wine glass  
With a broken rim  
A rose bush without thorns  
Insolent eyes.

MY PROM GIRL!

THE 1921 BIG "T"

D A N C E S



## THE 1921 BIG "T"

### VARSITY CLUB DANCE

Tech's 1920-21 social season was auspiciously opened on November 6 by the Varsity Club Dance. This was the first Tech dance to be held in the ball room of the Hotel Maryland. All previous dances given at the Maryland have been in the Palm Room.

Stanley's orchestra supplied a type of music that kept the floor crowded until after the last strains of Home Sweet Home.

In spite of a heavy downpour a large crowd turned out and enough money was realized to give the members of the football team their well-earned sweaters.

### FROSH DANCE

On December fourth the Pea-greens paid the debt they had incurred by losing the Pole Rush to the Sophs.

This payment was their version of a regular dance and was given in the ball room of the Hotel Green.

Although the Frosh lost the Pole Rush they won a reputation as hosts to the college. Remarkable as it may seem the punch lasted to the very (not bitter) end. Whaley (a talented freshman) and his orchestra ably furnished the necessary syncopations.

Everyone present pronounced it a fine dance, and even the Sophs had no criticisms to make.

## THE 1921 BIG "T"

### THE KEM KLUB KARNIVAL

Previous to this year the Chemistry Club has not taken part in the social side of College activities, but this year the Club entered the field by giving a dance.

The dance was given at the Hotel Maryland on January 15 and was a very successful affair. The programs were the feature of the evening, each dance being named by some chemical process or reaction.

The floor was not crowded and the Chem Club should receive due praise for the good time furnished all on the event of its first social gathering. The music was pronounced the best thus far in the year. It was furnished by Whaley's Orchestra.

### A. I. E. E. DANCE

On January 29th all precedent was smashed by the A. E. I. I. dance, given in hostile territory.

The basketball game at the S. B. U. C. gym was topped off with an informal scud, which, with the fine co-operation of S. B. U. C. Student Body officers, proved to be a social, not an hilarious, success.

The large crowd gathered in the gym enjoyed Whaley's orchestra and the "Gold Dust"-ed floor.

And, as much as has been said of the sixteen-to-one ratio at the Southern Branch, the Tech "co-eds" outnumbered the S. B. U. C. femininity certainly in that ratio.



## THE 1921 BIG "T"

### SOPHOMORE DANCE

One of the most enjoyable events on the Caltech social calendar was held at the Hotel Alexandria, February 11, when the Sophomore Class was host at a dance for the rest of the college—and as many of the Alexandria's guests as could squeeze on to the floor.

A four piece orchestra ably supplemented by a three-handed pianist furnished a program of ten dances and two extras which kept the crowd's feet agitated from nine bells until the desperate rally around the family coat hanger.

Between struggles the justly famous Alexandria punch was served by several liveried attendants who proved to be "Maj." Klein's only social rivals.

A world of credit is due the Soph dance committee, Evans, Bear, Cox and Meade, for the great success of the affair.

### GNOME CLUB INFORMAL

The Flintridge Country Club was used for the first time in Institute social affairs on the occasion of the Gnome Club informal given on April 2.

Stanley's orchestra was again in evidence and credited themselves in the fashion so often attributed to their brand of syncopation—absolutely unbeatable.

The scud came off in splendid fashion and the Gnome Club rates a vote of acclamation from all who attended.

### PAJAMBOREE

The City of Pasadena was "honored" during the first part of the second term by a visitation from the dorm rats. Practically every man living at the dorm assisted—with the aid of his pajamas. Every show in town was visited on the tour, but at only one—the Strand—were they made to feel even remotely welcome. Pasadena proper proved so unappreciative that the "jamboreers" decided to let the Broadoaks School get the benefit of their high spirits. The result of their visit there was a little informal dance which was enjoyed at least by the dormers, who pronounced the whole spree a huge success.

# THE 1921 BIG "T"

## DORM DANCES

The Dorm Club gave two informal and incidentally two very enjoyable dances this year, on February 26 and May 7.

A limited number of tickets were sold each time, which fact put them at a premium several days in advance.

Bush and Barnes, assisted by several pieces from Stanley's orchestra, passed out unrivalled syncopations.

The punch, though homemade, was no more shunned than the ten-dollar-a-quart kind.

The committees in charge of these dances produced results sufficient to make them rank among the most successful functions of the year.

## JUNIOR PROM

Rather than have their dance spoiled by an over-crowded floor, the Juniors issued for it a limited number of door cards.

The Prom was given at the Hotel Green on April 23, at the close of its winter season.

Stanley's orchestra furnished the music—the kind which kept even the most staid of chaperones out of the secluded corners.

To the extreme gratification and surprise of the revelers, and contrary to custom, dancing was allowed to continue until 12:30.

It was truly another of the "grandest affairs of the season."

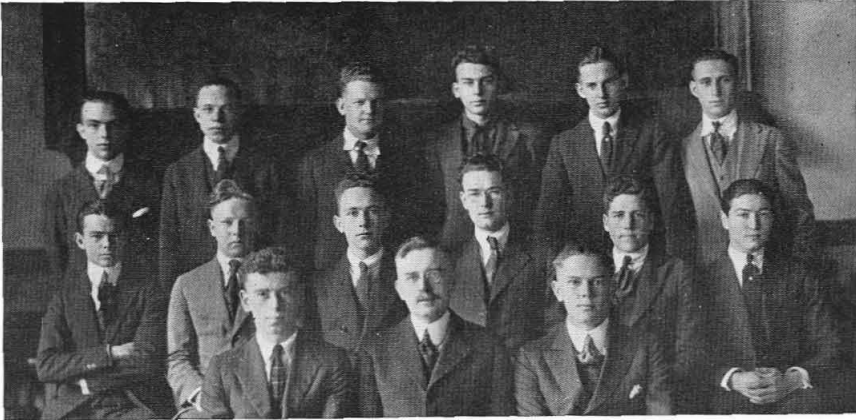
## SIGMA ALPHA PI DANCE

Owing to the death of their brother, Earl V. Studebaker, '24, Sigma Alpha Pi postponed their dance from May 27 to the night of June 10, the last day of the college year.



ONE OF THE DORM AFFAIRS

## THE 1921 BIG "T"



THE FRESHMEN DEBATERS

### THE FRESHMEN DEBATES

*President*.....Fred Groat  
*Secretary*..... Oliver Garver

**A**CTIVE participation in intercollegiate debate was abandoned by the students of the old Throop College several years ago. This year, Dr. MacArthur, a new man at the Institute, and a man who has for years been interested in forensics, feeling keenly the importance of the argumentative training resulting from the study of debate, called a meeting of all students interested. The upper classmen, feeling their already over-crowded courses of study prohibited their active participation in debate work, turned the meeting over to the freshman class.

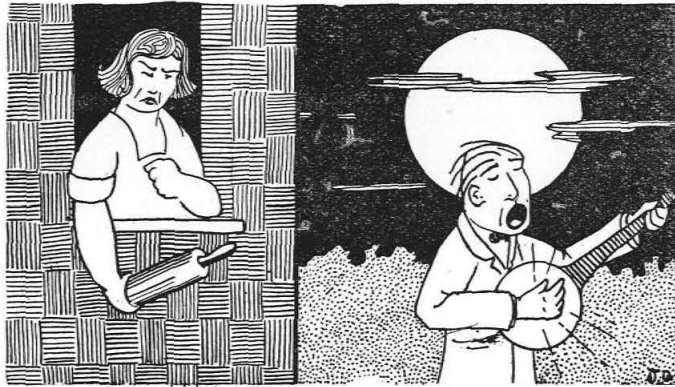
As a result a Freshman Debating Society was organized and officers elected. Tryouts were held among the freshmen debaters who showed promise and a squad was chosen to represent the freshmen in intercollegiate debate, and later three teams were picked from this squad.

Tech won two of the three debates scheduled, one from LaVerne College and one from Occidental, losing the third, a dual affair held with Southern Branch.

Under the leadership of Doctor MacArthur, the Freshman Society has enjoyed a truly successful year, and intercollegiate debate is back to stay at Tech.

# THE 1921 BIG "T"

M U S I C



## THE 1921 BIG "T"



D. C. MACKENZIE  
President

## THE GLEE CLUB



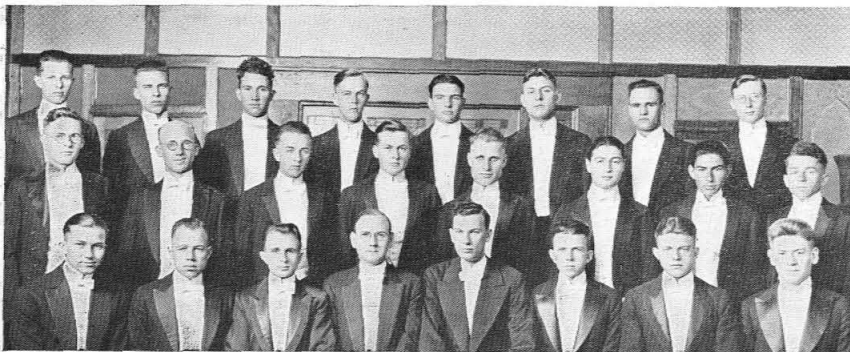
L. E. MORRISON  
Manager

As a premier entertaining organization de luxe, the Glee Club has just concluded its most popular and successful season. Concerts given at Alhambra, Huntington Park, Santa Monica, Pasadena and various schools were most enthusiastically received by large audiences and declared to be the best ever. The programs rendered included songs ranging from the heavier classics to light opera selections and rag time.

Mr. Douglas Mackenzie, tenor soloist, was in great demand and was always forced to give several encores before being "released."

As a side attraction, the B. B. twins, Bush and Barnes, on a piano and banjo, had some novelty acts that were in a class by themselves. Prof. Franklin Thomas coached the men throughout the year and to him is due the credit for the splendid success of the club.

Those receiving sweaters are: Herberger, Barnes, Bush, Mackenzie, Akers, Vesper, Mullin, H. Honsaker, Chandler, Morrison (Mgr.), J. Honsaker, Stauffer, Pine, Freeman, Spencer, Bangham, Hahn, Learned, Lownes, Clever, Meade, G. Stone.



## THE 1921 BIG "T"

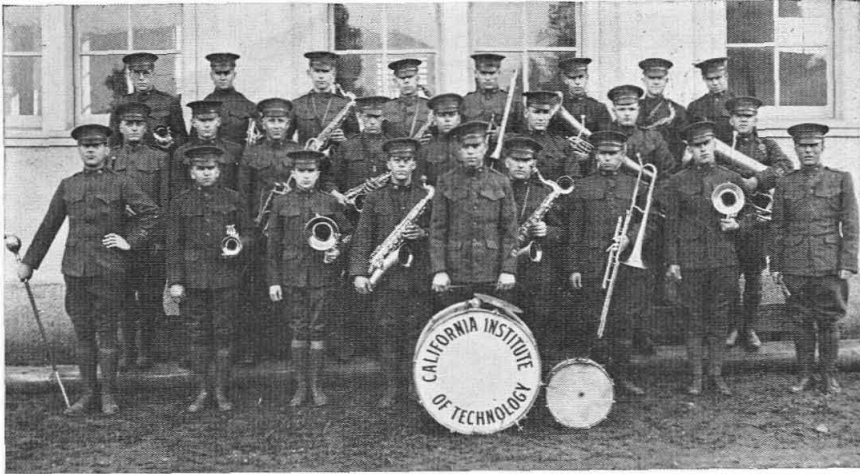


### MANDOLIN CLUB

This was the first year for the mandolin club and owing to the lack of available time for practicing, no attempt was made by the members to appear in public. Under the leadership of Bob Hare several enjoyable hikes over the week end were taken by the men to their lonely haunts in the mountains where mandolins, guitars and banjos were oiled up and their sharps and flats made to mingle with the smoke around the campfire.

Plans have already been arranged for a series of concerts during the ensuing year. With the exception of Barnes, banjo artist premier, the same bunch will be back, and with the advantage of a previous year's work together, some high class concerts are looked forward to.

## THE 1921 BIG "T"



THE TECH BAND

### THE BAND

**A**LTHOUGH being essentially a part of the R. O. T. C. military organization, the band has featured itself in all branches of college activities of the past year. It has done as much as any team towards making California Tech a leader among her rival colleges. Besides playing in all the military reviews the band took part in the Tournament of Roses parade on New Year's Day, offered a fine program at the S. P. A. A. U. Relays on February 19, played at various assemblies, and gave a few concerts in and around Pasadena.

An even more intensive program is laid out for next year, as plans are being made to accompany the football team on all of its trips.

As manager, H. R. Day has been most active in promoting social functions for the members. To him is due the greatest share of the credit for the success the organization has attained. Every four weeks a get-together dinner is given at the Dorm, after which a rehearsal is held and various plans discussed. Manton Barnes has shown his marked ability as leader, while Schneider as drum major has kept the little boys agog with his huge horse-hair helmet and remarkable contortions with the silver baton.

# THE 1921 BIG "T"

## THE SAXAPHONE QUARTET

The four saxaphone jazz bandits, known to the underworld as Catlin, Wrestler, Leavitt, and Hall, have kept their audiences in an extreme state of unrest throughout the year.

Whenever "pep" was needed for a big rally before a game or meet, a requisition was immediately put into effect for their services along with those of Bush, Barnes & Co. However, the quartet's activities have not been centered around college entirely for they have been just as much in demand for various social and club affairs on the outside.

Numerous trips were made with the Glee Club, as an added attraction on the latter's program. "Cat," on his big bass sax, has been acting as leader and has no rival even unto Tom Brown and his famous clown band.

Suffie to say, seats sell at a premium with this gang listed on the bills.

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## THE BAND MEMBERS

### CORNETS

Hopper  
Jenkins  
Blakeley  
Chandler  
Dickson

### BARITONES

Walters, J. P.  
Gould

### SAXOPHONE C MELODY

Hall

### BASES

Kohtz  
Hertenstein

### SAXOPHONE BARITONE

Catlin

### ALTOS

Davis  
Puls  
Bush  
Keith

### CLARINETS

Unthank  
Ramseyer

### DRUMS

McCarter  
Noble  
Day

### TROMBONES

Bear, R. E.  
Pardee  
Munson  
Eckerman

### SAXOPHONE

Leavitt

### DRUM MAJOR

Schneider

### SAXOPHONE TENOR

Wrestler  
Thayer  
Schaffer

### LEADER

Barnes



# THE 1921 BIG "T"

## YOUNG MEN'S CHRISTIAN ASSOCIATION



DR. M. A. SHIPMAN

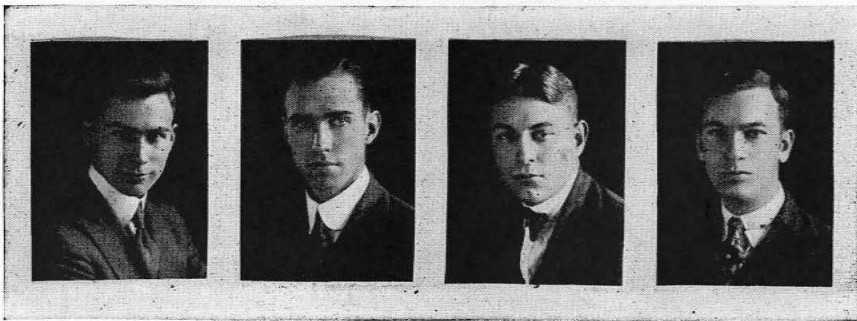
DR. SHIPMAN,  
GENERAL SECRETARY

Owing to the resignation of Mr. Robson, last year's general secretary, the cabinet had to seek a new general secretary. He was found in the person of Dr. M. A. Shipman, the associate general secretary of the Pasadena Y. He has been able to come to the Tech Y. on half time only, so his work has been doubly hard. Nevertheless, he has been able to put over a program that has been a decidedly pleasant influence in this year's life of the Institute.

**T**HE Y. M. C. A. went ahead on the general plan outlined last year with very good success. A general secretary was secured to attend to the main business of the association and an interesting and complete program resulted.

The chief activities carried on by the Y during the year included a reception given to the Freshman class at the first of the year, the maintaining of an employment bureau, the conducting of bible classes, the annual members' banquet, and a series of addresses on the world's leading religious sects.

Other activities consisted of a delegation to the Asilomar Christian Leadership Conference, several social events in conjunction with Pasadena's leading churches, assembly speakers under the auspices of the Y, and regular Wednesday noon religious meetings which were particularly well arranged and attended.



BLAKELY  
A. C. L. C. Delegate

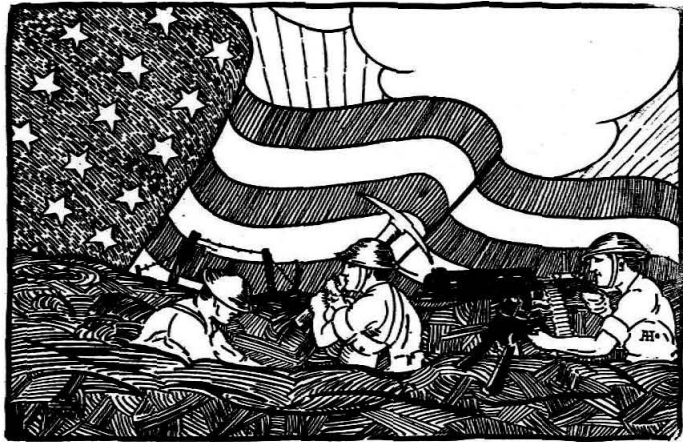
SEAVER  
Secretary  
J. HONSAKER, Vice-President

CLEAVER  
President

MACKENZIE  
Treasurer

THE 1921 BIG "T"

M I L I T A R Y



## THE 1921 BIG "T"



CAPT. HANS KRAMER

### FOREWORD

*From:* The Professor of Military Science and Tactics.

*To:* All Tech Men, Everywhere.

*Subject:* Carrying a Rifle in College.

1.. I didn't raise my boy to be a soldier was a favorite tune within recent history. Its appeal and sentiment were soon forgotten, however, in a great conflict. The words "I didn't come to college to carry a rifle" have not yet been set to music, but their prevalence cannot be denied. Popularizing military training is as difficult as enforcing the eighteenth amendment. Why?—because it is the nature of the independent American to look askance upon anything that savors of restriction of his personal liberty or that tends to suppress his individuality.

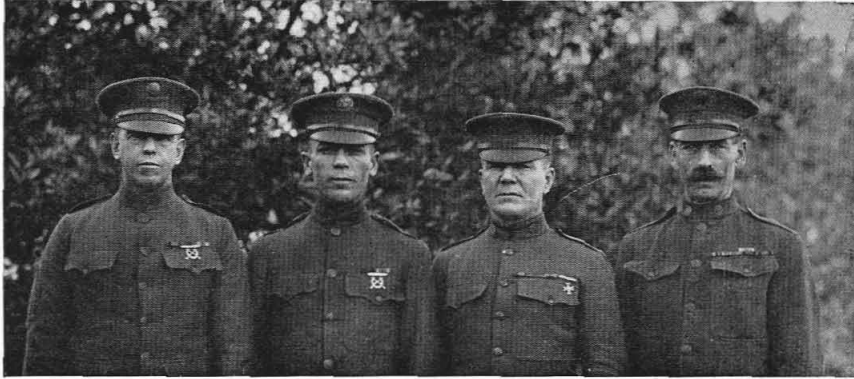
2. About military discipline there is as much misconception as there is about the theory of relativity. Discipline is loyal obedience. It is cultivated by the same methods in both civil and military life. The distinction that is often made is that punishments are prescribed by law for infractions of military discipline while no punishments are prescribed by law for infractions of discipline in a civil organization. Yet discipline, loyal obedience, must be maintained in a successful civilian organization engaged in engineering or any other work. The man who persistently defies his employer is simply eliminated from the scheme of things.

3. The purpose of the World War was to make the world safe for democracy. For this end our government expended billions in treasure and thousands of lives. Today the newspapers tell of long lists of slackers. Let's get nearer home—

Is it a disgrace to carry a rifle in college?

HANS KRAMER, Captain, Corps of Engineers.

## THE 1921 BIG "T"



SGT. BAILEY SGT. POUNDS M. SGT. LARACY SGT. COOK

### Reserved Officers Training Corps at California Tech



At the close of the last college year the Institute authorities decided to drop military training from the curriculum. As a sort of farewell to its reign at Tech, some sixty men took advantage of the summer training offered to Engineer R. O. T. C. units at Camp Humphreys, Virginia.

The true value of the work they did there, both to themselves and the country, made a decided impression on them. Realizing this value, a petition was presented to the Board of Trustees, signed by all the men who attended the camp, asking that military training be again installed as a part of the college work. The provision was made, however, that the work, insofar as was possible, should follow the same general lines as that given at Humphreys.

The desired consent was given, with the result that the Military Department has just completed the most successful year since its installment in 1916. Not only have the 200 men taking the courses been benefited thereby, but the nation has profited by the training they have received, which fits them for possible emergencies.

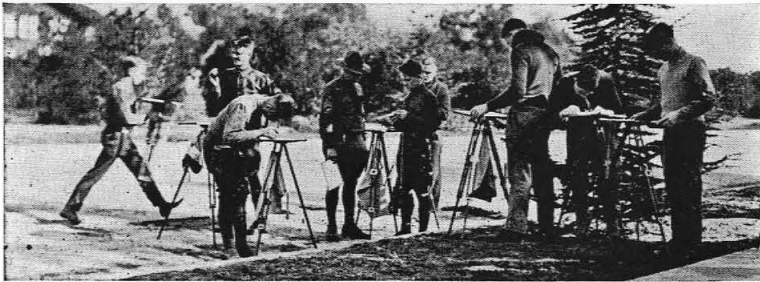
Intensive training in pontoon bridge building, signaling, knots and lashings, etc., was given the freshmen and sophomores. The juniors were instructed by Captain Kramer in field fortifications, demolitions, reconnaissance, and mapping. The seniors received courses in martial law and permanent fortifications. Several interesting problems were given by the Captain, among them the mapping of a portion of the City of San Marino (another section of which will be mapped next year), and the preparation of reports on the possible utilization of Tournament Park as a semi-permanent cantonment for a regiment of engineers. The solution of this problem also required the making of a map.

## THE 1921 BIG "T"

The department succeeded in distinguishing itself in several ways during the year. The two rifle teams, composed of ten men each, and alternates, from the Advanced and Basic groups respectively, got second and third places in the Ninth Corps Area shoot. Seventeen teams, representing twelve colleges in the Ninth Corps Area, competed in the shoot. Vesper was high man with 184, Stromsoe second with 183, and Reynolds tied for third with a man from the University of California at 182. The University of California won the shoot by two points.

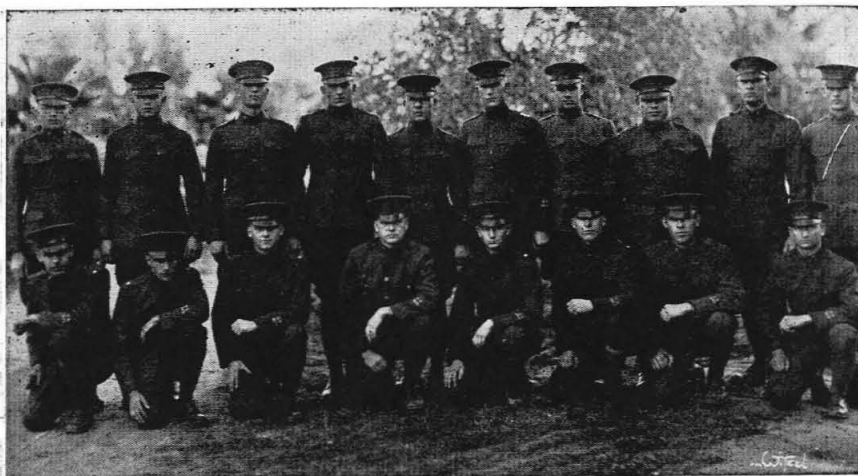
The battalion was ranked high in general efficiency and training among the R. O. T. C. units throughout the country.

The success of the year is due to the earnest and tireless work of Captain Kramer and his assistants, Sergeants Laracy, Bailey, Pounds, Cook and Gerhardt, supplemented by the wholehearted support of the cadet battalion.



SKETCHING

## THE 1921 BIG "T"



### CORPS ROSTER

#### COMMANDANT

Captain Hans Kramer, Corps of Engineers (D. O. L.)

#### INSTRUCTORS

*Master Sgt.*, Joseph Laracy (D.E.M.L.)

*Staff Sgt.*, Louis H. Bailey (D.E.M.L.)

*Sgt.*, Harry P. Gerhart (D.E.M.L.)

*Sgt.*, William M. Pounds (D.E.M.L.)

*Reg. Com. Sgt.*, William C. Cook. Retired. F.A.

#### BATTALION HEADQUARTERS

<i>Major</i>	<i>Adjutant</i>	<i>Supply Officer</i>
Hambrook, R. E.	Webster, G. M.	Reynolds, M. S.
<i>Sgt. Major</i>	<i>Corporal Bugler</i>	
Preston, R. W.	Stoutenburgh, P. M.	

#### BAND

*Sergeant and Drum Major*

Schneider, W. A.

#### MUSICIANS

*Barnes, M. M.	Gould, A.	Noble, W. N.
*Bear, R. E.	Hall, A. C.	Ramseyer, G. M.
*Blakeley, L. E.	Hertenstein, W. M.	Scott, C. L.
*Catlin, A.	Jenkins, G. V.	Shaffer, C. L.
*Chandler, L. F.	Keith, C. R.	Unthank, M. R.
Davis, W. P.	Hopper, B.	Walters, C. P.
Day, H. R.	Kohtz, R. H.	Wrestler, O. L.
Dickson, G. C.	Leavitt, W. B.	Leavitt, W. B.
Eckerman, C. R.	Munson, S.	

\*NOTE—Men so marked are in band but do not take Military.

# THE 1921 BIG "T"

## "A" COMPANY

### CAPTAIN

Stenzel, R. W.

### LIEUTENANTS

Vesper, H. G.

Maier, J. B.  
Barnsdale, G. H.

Crissman, R. J.

### SERGEANTS

Clough, F. H.  
Myers, T. G.

Schreiber, E. H.  
Evans, B. G.  
Shield, J. E.

Wells, L. J.  
Batty, B. E.

### CORPORALS

Timmons, C. W.  
Owens, C. R.  
North, F. L.

Alcorn, M.  
Alcock, J. R.  
Getsinger, B. W.

Harries, D. G.  
Bangham, W. L.  
Bravender, N. F.

### PRIVATES

Amos, G. A.  
Baker, H. W.  
Banks, S. A.  
Barger, O.  
Blackburn, D. A.  
Bugbee, J. M.  
Dorestein, E.  
Endicott, H. S.  
Farnham, H. H.  
Fenner, L. G.  
Gandy, E. H.  
Goodhue, H.  
Groat, F. J.

Hall, L. W.  
Hart, G. W.  
Hastings, R.  
Hand, W. P.  
Harker, D. G.  
Hodge, B.  
Hovaghimian, H.  
Kingsbury, W.  
Kephart, G. E.  
Kirkpatrick, M.  
Landau, M.  
Little, F.  
Maltby, C.  
Mayer, J. E.

Moody, M.  
Moyse, H. W.  
Newton, A. A.  
Nies, T.  
Ridgeway, R.  
Ross, M.  
Roth, L. P.  
Springer, H. C.  
Stern, C. B.  
Stone, E. B.  
Taggart, W. M.  
Watson, H. H.  
Weisel, Z. V.

# THE 1921 BIG "T"

## "B" COMPANY

### CAPTAIN

Scribner, H. I.

### LIEUTENANTS

Erb, L. H.

Varney, C. W.  
Whistler, A. M.

Smith, D. D.

### SERGEANTS

Groat, E. T.  
Van Pelt, R. A.  
Hitchcock, G. D.

Kemp, E. G.  
Devoe, J. J.

Hess, E. R.  
Potter, W. D.  
Powers, C. W.

### CORPORALS

Cox, J.  
Howard, C. S.  
Tracy, H. F.

Wilson, R. C.  
Priddy, R. J.  
Kendall, D. C.

Baker, F. A.  
Schonborn, R. J.  
Kuffell, G. C.

### PRIVATEES

Atherton, T. L.  
Baier, W. E.  
Ball, E. B.  
Beck, H. R.  
Beeson, M. L.  
Bonnnett, A. B.  
Blackburn, J. F.  
Broady, L.  
Carrier, P. H.  
Dickson, C. W.  
Dreyer, W. C.  
Flick, H.  
Fowler, L. D.  
Herberger, A. L.

Hickox, A. G.  
Humphreys, C. J.  
Hutchinson, G. W.  
Knowles, C. E.  
Langdon, R.  
Lewis, E. D.  
Loop, R. L.  
Losey, C. T.  
Lukens, H. M.  
McCarter, H. A.  
McCarter, K. C.  
McKaig, A.  
McKinney, W. H.

Mercereau, J. T.  
Michael, A. F.  
Mitchell, H. H.  
Moore, W. F.  
Pine, F.  
Pletsch, T. L.  
Powers, M. V.  
Rose, E. M.  
Ross, L. W.  
Warren, H. L.  
Whaley, K. L.  
White, D.  
Whiting, R.  
Whittington, J. W.



# THE 1921 BIG "T"

## "C" COMPANY

### CAPTAIN

Klein, A. L.

### LIEUTENANTS

Mackenzie, D. C.

Wesseler, M. J.  
Seares, R. U.

Barnett, H. A.

### SERGEANTS

Stromsoe, D. A.  
Larson, L. C.  
Ogden, H. S.

Garfield, A. J.  
Benioff, B.  
Walters, F. W.

Maurer, F. A.  
Darnell, D. W.  
Timourian, H.

### CORPORALS

McKee, J. T.  
Woods, H.  
Schofield, S. T.

Stratford, J. P.  
McClung, F. J.  
Evans, G. P.

Hickey, G. I.  
Albright, H. L.  
Acres, L. H.

### PRIVATEES

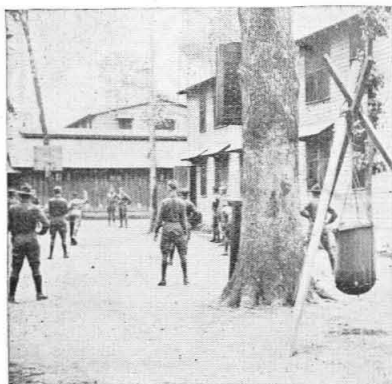
Anderson, K. R.  
Barcus, E. D.  
Barton, E. H.  
Bell, S.  
Campbell, D.  
Clark, R. S.  
Cornelison, E. D.  
DeRemer, E. N.  
Dinsmoor, D. M.  
Duncan, F. S.  
Fulwider, R. W.  
Goldsmith, M.  
Hill, B. A.  
Hoak, E. W.

Leishman, J. W.  
Leter, E. A.  
Liddell, O. E.  
Lownes, E. D.  
Morrell, D. F.  
Mott-Smith, L.  
Peffer, R. E.  
Pickett, A. G.  
Piper, W. J.  
Pope, H. F.  
Prentice, L. B.  
Punton, C.  
Ross, J. M.

Russell, M. J.  
Schlegel G. H.  
Sellers, D. F.  
Smith, E. W.  
Squiers, W. H.  
Staley, C.  
Stokes, E. C.  
Tellwright, F. D.  
Thompson, W. K.  
Tracy, W. H.  
Thomas, T.  
Waite, A. M.  
Waldo, C. T.  
Woods, R. E.

## THE 1921 BIG "T"

### CAMP A. A. HUMPHRIES, VIRGINIA



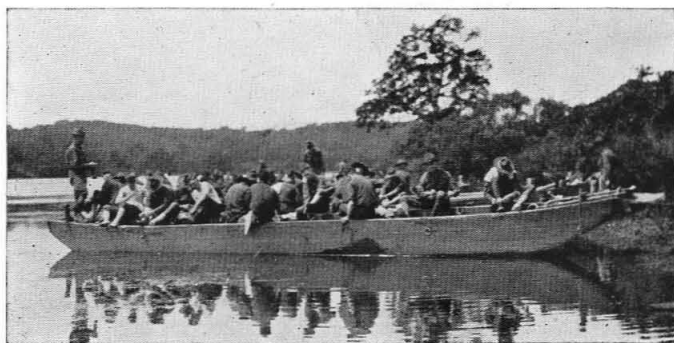
**S**IXTY-EIGHT men will take the six weeks course in military engineering given at Camp Humphreys this summer.

The men from Tech who attended last year were practically the life of the camp. They founded and edited a camp book, "The Sketching Board," organized baseball and basketball teams, and succeeded generally in taking a leading place among representatives from such colleges and universities as Massachusetts Institute of Technology, Oregon, and Yale.

With Captain Kramer's training of the year just closing and their own interest in the work to back them, the college can be sure that the men who go east will again make a creditable showing at the camp, and will be prominent among men from the best colleges in the country.

Captain Kramer, a West Point graduate of 1919, first made the acquaintance of Tech men at last summer's camp, where he was Adjutant. At the beginning of the year he was transferred here as Professor of Military Science and Tactics. His earnestness in helping the men to get the most possible from the courses his department offered has won him the men's appreciation, and his spirit of good fellowship their respect and liking.

Without such men as the five sergeants to help him, even Captain Kramer's efforts to make the military work worth while would have amounted to little. The sergeants did more than merely earn their pay from the Government. They spent many extra hours on their work, and nearly every game or meet in which the college took part has sported the presence of at least one rooter from the Military Department.



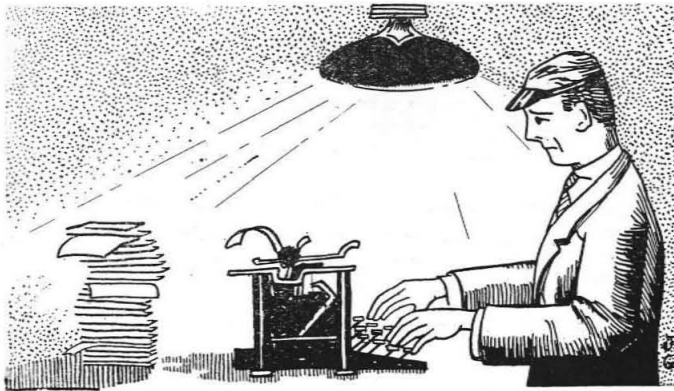
# THE 1921 BIG "T"



TRENCH WORK

THE 1921 BIG "T"

P U B L I C A T I O N S



## THE 1921 BIG "T"



McKEE

GILLIES

MAURER

VARNEY

ALCORN

## THE CALIFORNIA TECH

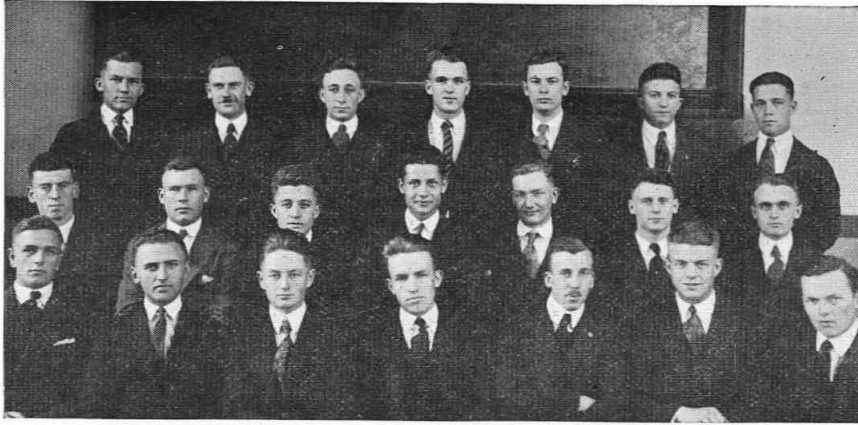


HE TECH as a weekly paper had its inception early in 1919, shortly after the S. A. T. C. had been disbanded. Before that time it had been a monthly magazine of principally literary and technical articles.

To Douglas Stromsøe and Lester Warner, the first Editor and Manager, a great deal of credit is due for the time and effort spent in placing the first weekly on a creditable basis.

They were succeeded by Sinclair Smith and Don McCreery, and the size was increased by half. Arthur Garfield and Wynne Mullin took the joint responsibility last year and for a time the present size was adopted. These early editors and managers were constantly being hampered by financial difficulties, until finally the Student Body voted to take over the responsibility of finances, and this year, under the capable leadership of Frederic Maurer and Charles Varney, the Tech has grown to truly representative proportions and has become indispensable in the life of the Institute.

## THE 1921 BIG "T"



### EDITORIAL STAFF

Editor.....	Frederic A. Maurer, '22
Managing Editor.....	Robert Gillies, '22
News Editor.....	Max Alcorn, '23
Sporting Editor.....	George McKee, '23
Alumni Editor.....	Walter Keith, '20
Special Writers.....	Arthur J. Garfield, '22
	Charles F. Quirnbach, '21

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Advertising Manager.....	Lloyd A. Walling, '22
Assistant Advertising Manager.....	Floyd Baker, '23
Circulation Manager.....	Ray Preston, '22
Assistant Circulation Manager.....	Ernst Schreiber, '22

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Howard Vesper, '22	Richard Hambrook, '21

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Douglas McKenzie, '22	Robert Ridgeway, '24
Richard Seares, '22	Daniel M. Campbell, '24
George Hickey, '23	Alfred Newton, '24
Loren E. Blakeley, '22	Jack Cox, '23
Cartoonist.....	Arthur Herberger, '23

## THE 1921 BIG "T"



ARTHUR J. GARFIELD  
Editor

## THE 1921 BIG "T"



MANTON M. BARNES  
Manager

**B**EFORE the innovation of the TECH as a weekly, the year book was merely an elaborated edition of the TECH. Last year under the editorship of George Suman the "Annual" took on the appearance of a genuine college year book and bloomed forth with art work, cloth binding and a distinctive name, "The Orange and White."

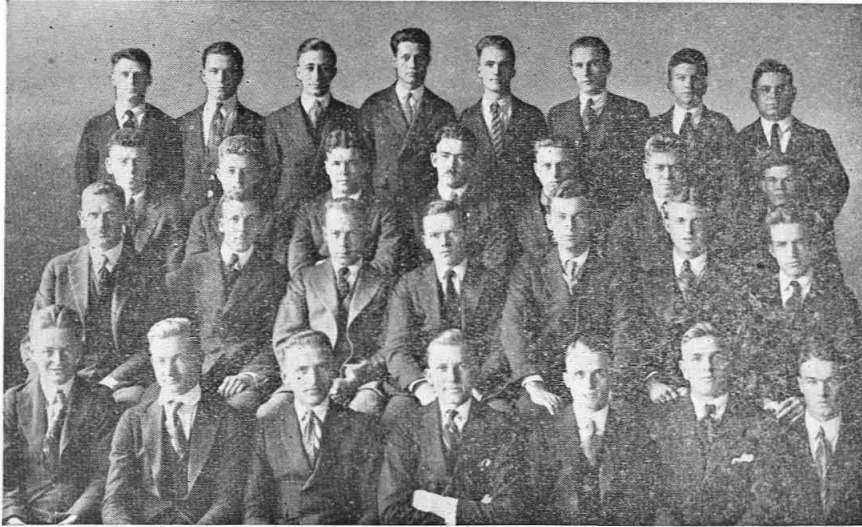
This year the editors were not in sympathy with the above title and changed it to the "BIG T," typical of our most famous tradition and "undeniably our own," whereas the other, though certainly adequate, savored too much of an imitation of the U. C.'s "Blue and Gold."

The editorial staff this year was organized into several departments, each staff representing a book and headed by an editor who worked separately with his own staff. The entire book was supervised and put together by the editor-in-chief.

The business manager ran up against several difficulties. Advertising receipts fell to a little better than half of what they had been the year before, printing and engraving were, on the contrary, up thirty per cent, and the necessitated rise in price caused some sixty student body men not to buy; on the whole a formidable problem.

Nevertheless the book is here, and whatever it is, it is representative of the ascertainable best efforts of the Associated Student Body.

## THE 1921 BIG "T"



### THE BOARD

Arthur J. Garfield  
*Editor-in-Chief*  
Martin M. Barnes  
*General Manager*

THE INSTITUTE  
Clyde R. Keith, *Editor*  
Francis Hopper  
Richard Hambrook

SENIORS  
Sinclair S. Smith, *Editor*  
Jesse Arnold  
Wynne Mullin

ATHLETICS  
Frederic A. Maurer, *Editor*  
Ben Benioff  
George McKee  
Douglas Mackenzie

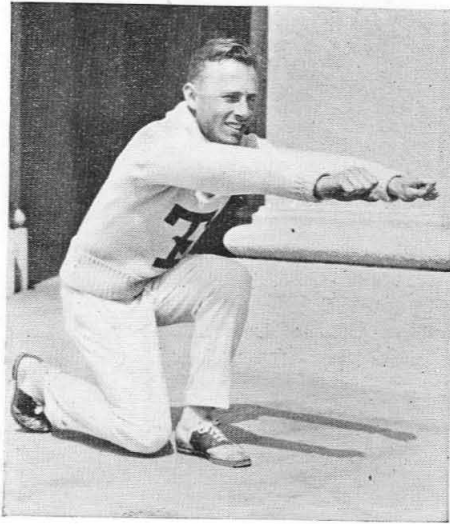
ADVERTIZING  
Charles Varney, *Manager*  
Richard Van Pelt  
Jack Cox

*Artists*  
Robert Wulf  
Arthur Herberger

THE COLLEGE YEAR  
Douglas A. Stromsoe, *Editor*  
Walter Moore  
Lloyd Walling  
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Loren Blakeley  
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Charles Quirnbach  
PHOTOGRAPHY  
Edward Forgy, *Manager*  
Henry Case  
Arthur L. Klein  
Ernst Schreiber



## THE 1921 BIG "T"



LOUIS ERB  
Yell Leader, 1920-21

### THE YELL LEADERS

**L**OUIS ERB, A. S. B. President-elect, has for two years held the position of Caltech yell leader. In fact most of the student body is unable to remember that C. I. T. ever had any other yell leader. At all rallies and at all games, no matter how small the turnout, Erb has been on the job and has invariably delivered the goods.

Dick Seares, a limber chap, is his successor and shakes a wicked pair of lungs.

The yells next year ought to remain at par at least.

## THE 1921 BIG "T"

# A RESUME OF THE COLLEGE YEAR.

1920

March 3—Dr. J. A. B. Scherer resigns as head of the Institute.

Sept. 16—At request of students, R. O. T. C. work at the Institute to be continued.

October 4—First assembly of the year. Many new professors were introduced to the students. Announcement that enrollment much larger than in previous years.

October 8—Tech goes down to defeat to the strong U. S. C. squad—46-7. First Student Body meeting held. Interesting things told by the editors of the Tech and the Orange and White.

October 14—Freshmen defeated by Sophs in the annual Pole Rush.

October 18—Dr. Tully Knowles talks on World Finance and Exchange. Tech defeats the Sherman Indians in a practice game by the likely score of 61-6. Frosh rules published.

October 23—Tech eleven defeated by Pomona 28-7. Faculty raises scholarship requirements.

October 25—Assembly talk by the winner of the Junior Travel Prize, David F. Smith.

October 30—Tech eleven ruins Whittier's chances in football. The game was fast, the score being 21-7. Freshmen lose to Southern Branch Frosh 14-0.

Nov. 1-3—Prominent men spoke in assembly—Henry W. Wright, John F. West, Dr. James H. McBride.

Nov. 6—Oxy Tigers defeat Tech's squad in hot hattle 12-7. Varsity Club Dance at Hotel Maryland a great success.

Nov. 8—Dr. Judy talked to the assembly.

Nov. 13—Southern Branch defeated by Tech 32-0.

Nov. 20—Tech ties Redlands in a hard fought game 7-7. Tech Frosh tie Oxy youngsters 7-7.

Nov. 22—Talk on Fourth Dimension by Dr. Charles Henry Benjamin.

Nov. 26—Prof. Clapp and Geology class hike in Big Tejunga. Basketball starts in full swing.

## THE 1921 BIG "T"

- Dec. 4—Freshmen Scud a nifty social event. Annual staff busy.
- Dec. 6—Dr. Brougher entertains Student Body in assembly.
- Dec. 10—Annual Football Banquet given at I. O. O. F. Hall.
- Dec. 13—Assembly program given by students.
- Dec. 18—College closes for Christmas recess.
- 1921
- Jan. 3—Resumption of instruction.
- Jan. 7—Tech defeated by L. A. A. C. quintet 47-12. Dancing which followed given by A. I. E. E.
- Jan. 8—Tech hoop tossers go down to defeat before U. S. C. 43-22.
- Jan. 11—Selection of annual staff announced.
- Jan. 15—Tech defeated by Pomona 38-25. Kem Klub Karnival enjoyed by all after game. Cadet Officers' Club formed at Tech.
- Jan. 19—Tech flags strong Whittier aggregation.
- Jan. 22—Tech defeated Oxy quintet 34-28. Tech Frosh "5" spoils hopes of Oxy Frosh in hard game, 19-18.
- Jan. 25—Tech beaten by Redlands.
- Jan. 29—Tech Varsity defeated by S. B. U. C. 32-18. Tech Freshmen hold Branch Frosh to close game of 24-20.
- Feb. 2—Tech downs Pomona in second game 35-31.
- Feb. 5—Tech defeated by Whittier 28-25.
- Feb. 9—Interclass Track Meet won by Juniors.
- Feb. 10—E. S. Carman, National President A. S. M. E., spoke at special assembly.
- Feb. 11—Soph Hop at Hotel Alexandria nifty affair.
- Feb. 12—Tech defeated by Redlands 30-17. Chem Club hike to Forest Home.
- Feb. 19—A. A. U. Relay Carnival at Paddock Field. Tech defeats California Cubs 27-22.
- Feb. 26—Tech's Tennis team defeated the Southern Branch U. of C. Tech takes second in quadruple meet at Pomona. Dorm Dance thought fine affair by all who were lucky enough to go.

## THE 1921 BIG "T"

March 5—Pomona's Tennis team defeated the Tech squad. Tech defeated Branch in dual meet 73 5/6-57 1/6. Tech wins second and third in rifle shoot.

March 12—Oxy meet postponed.

March 19—Conference Track Meet at Paddock Field.

March 20-27—Spring vacation.

April 5—The Press Club edition of the Tech was put out by the initiates of the Club. The edition of the paper was called THE HOT RIVET.

April 9—Tech defeats Occidental in the first game of the season, 9-3.

April 13—Tech defeated the Southern Branch in a speedy baseball game 12-3. Tech racquet wielders beaten by the University of Southern California.

April 22—Close baseball game goes to Pomona College by score of 4-3.

April 27—Tech defeated by U. S. C. in baseball by a score of 11-9.

April 28—Tech defeated by Occidental in fast swimming meet, 42-35.

April 30—Tech beaten by Redlands 11-0.

May 7—Occidental wins close ball game, 2-0.

May 11—Tech defeats Southern Branch 13-11.

May 12—The Seniors of the Institute took it upon themselves to strew the sands of Ocean Park with their intellectual personalities on the first Senior "Ditch Day."

May 13—Conference Swimming Meet won by Tech, making it the second year in succession. Big "T" goes to press.

THE 1921 BIG "T"

MEN OF '21

---

Memories  
And the friendship's made  
Will still be fresh  
Long, long after  
The words of wise men  
And the lore  
Of text books  
Are dimly  
Cloistered in the past.

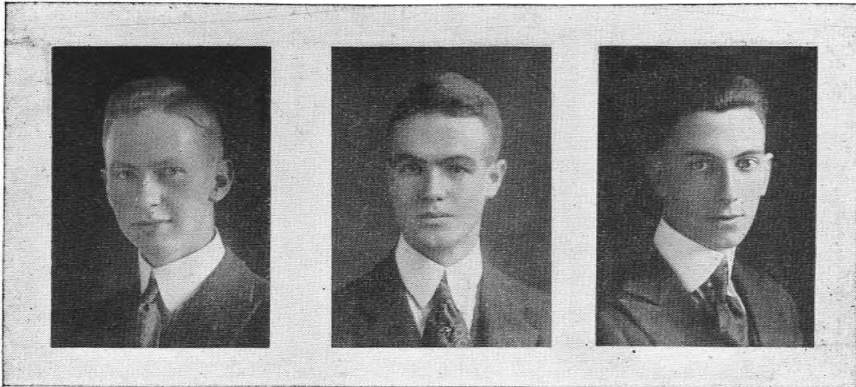
THE 1921 BIG "T"



# SENIORS

BOOK III  
Sinclair S. Smith  
Editor

# THE 1921 BIG "T"



CHAMPION

FORGY

HARE

## CLASS OFFICERS

*President*.....Edward G. Forgy  
*Vice President*.....Edward L. Champion  
*Secretary-Treasurer*.....Robert Hare

### *Representatives Board of Control*

Manton M. Barnes

Clifford Potts

Wynne B. Mullin

Richard Hambrook

## GRADUATES IN CIVIL ENGINEERING

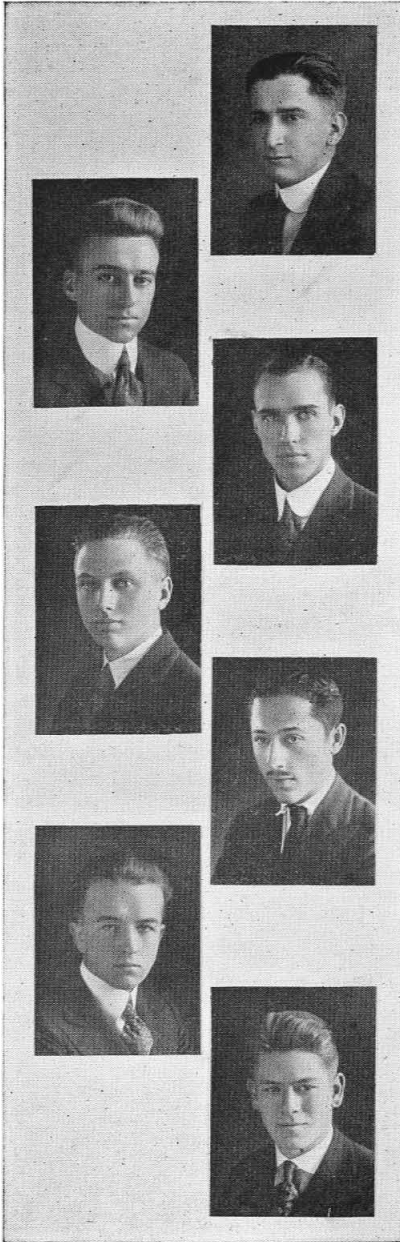


**T**HE civil engineer's role in life is one in which his activities result in making life more worth living for his fellow men. He does this often by penetrating the wilderness or desert and altering the conditions produced by nature so that some element of nature, unserviceable by itself, may be transposed and become of great usefulness. Flowing water may be directed so as to yield its energy, or it may be diverted hundreds of miles to make the proverbial blades of grass grow where none grew before.

Within the province of the engineer is the task of overcoming the isolation resulting from distance, or from natural barriers. The civil engineer is needed not alone in pioneer regions, for where population is most dense, there is the necessity for establishing sanitary conditions, and also for providing rapid and unobstructed transportation facilities. The materials with which the civil engineer achieves his results are as varied as his problems or the environment in which he may work.



## THE 1921 BIG "T"



JOSEPH FOX, Los Angeles, Cal.,  
A.S.C.E.

FRANK C. MAKOSKY, Santa Ana,  
Cal., Sigma Alpha Pi, A.S.C.E.,  
Honors Committee (4).

EDWARD D. SEAVER, Pasadena,  
Cal., A.S.C.E., Oratorical Mgr.  
(2), Oratorical Representative  
(2), Sec'y So. Calif. Oratorical  
Assn. (2), Conger Peace Prize  
(2), Y.M.C.A. Sec'y (4). Pi  
Kappa Delta.

JESSE ARNOLD, Huntington Beach,  
Cal., A.S.C.E., Pres. (3), De-  
bating Mgr. (3) (4), "Big T"  
Staff (4), Treas. So. Calif.  
Oratorical Assn. (4).

LOUIS KORN, Los Angeles, Cal.,  
A.S.C.E., Art Editor of "Tech"  
(1), Art Editor of Annual (1),  
Y.M.C.A., Debating Team (3).

LLOYD E. MORRISON, Pasadena,  
Cal., Gnome Club, A.S.C.E.,  
Class Secy. (3), Chairman of  
Honors Committee (4), Glee  
Club (1) (2) (3) (4), Pres.  
of Glee Club (3), Mgr. (4),  
Oratorical Representative (4).  
Pi Kappa Delta.

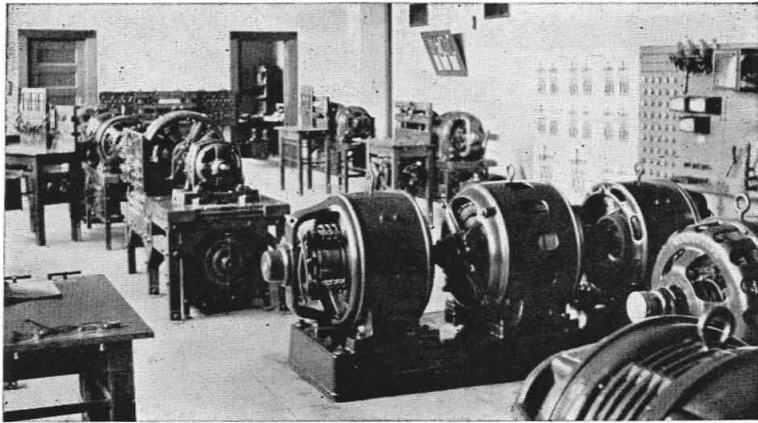
WYNNE B. MULLIN, South Pas-  
adena, Cal., Sigma Alpha Pi,  
A.S.C.E., Board of Control (2)  
(4), Advertising Mgr. of  
"Tech" (2), Business Mgr.  
(3), "Big T" Staff (4), Glee  
Club (2) (4), Football (3)  
(4).

THE 1921 BIG "T"



COLORADO STREET BRIDGE

# THE 1921 BIG "T"



ELECTRICAL ENGINEERING LABORATORY

## THE 1921 BIG "T"

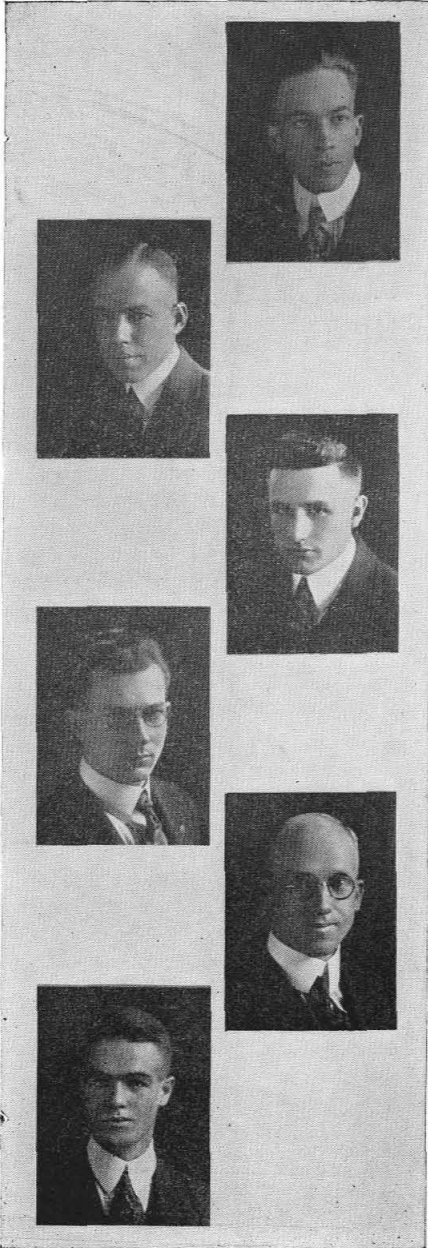
### GRADUATES IN ELECTRICAL ENGINEERING



**D**UE to the vision of the engineer the glisten of the snow is carried over threads of aluminum, from its home in the crags of the mountain tops, down into the valley, into the humble as well as the magnificent home. As a result we work or play long after the dinner hour and well into the night time, under conditions as pleasant and comfortable as those prevailing under the glory of an afternoon sun. Again the electrical engineer dreams and out of his fancy come strange and powerful mechanisms of copper, steel and fabric, which transform the depths of the earth into electrical energy, for ease of transportation, and then again, into energy of motion or heat at convenient points of application.

Thus endeth the first period of his endeavor and all is well, for by making it possible to use in habitable place the natural energy of uninhabitable places the electrical engineer has done much to eliminate from the problem of mankind a consideration of space, one of the great obstacles in the way of human accomplishment.

## THE 1921 BIG "T"



RAYMOND W. AGER, Pasadena, Cal., A.I.E.E., Junior Prize (3), Asst. in Mechanical Engineering (4).

MANTON M. BARNES, Monrovia, Cal., Gnome Club, Board of Control (4), Mgr. of "Big T" (4), Press Club, Glee Club (3) and (4).

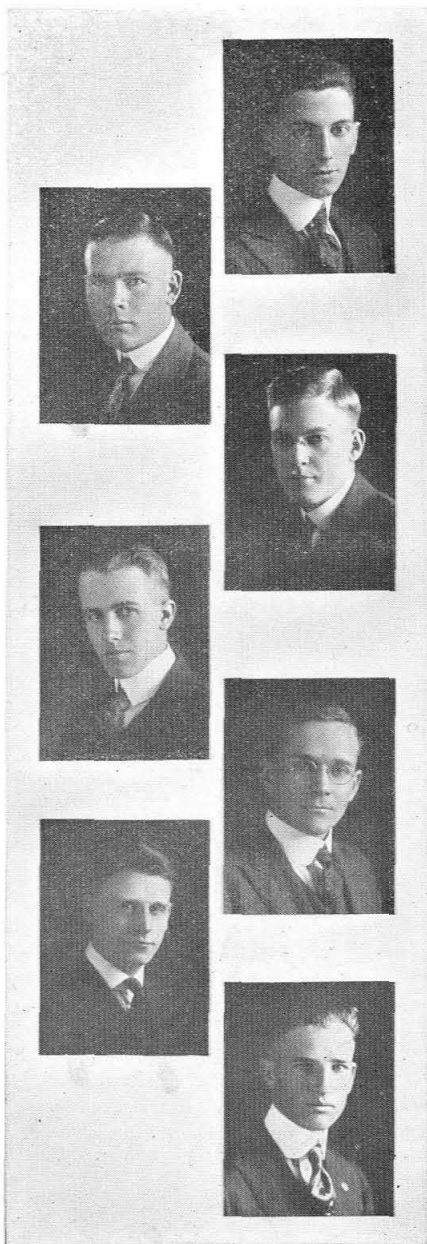
GARNETT BARNSDALE, Los Angeles, Cal., A.I.E.E., Glee Club (1) and (2).

HENRY R. CASE, Pasadena, Cal., A.I.E.E., Staff Photographer "Big T" (3) (4).

LAWRENCE F. CHANDLER, Glendale, Cal., A.I.E.E., Sec'y (4), Y.M.C.A., Glee Club (3) (4), Mandolin Club (4).

EDWARD G. FORGY, Los Angeles, Cal., Gnome Club, A.I.E.E., A.S.B. Treas. (3), Sec'y (4), Class Pres. (4), Asst. Mgr. of "Big T" (4), Y.M.C.A. Vice Pres. (3), Dorm Club Sec'y (2).

## THE 1921 BIG "T"



ROBERT J. HARE, Los Angeles, Cal., Gnome Club, A.I.E.E., A.S.B. Treas. (4), Class Sec'y (4), Mandolin Club (1) (4).

RICHARD E. HAMBROOK, Pasadena, Cal., Gnome Club, A.I.E.E., Board of Control (2), A.S.B. Vice Pres. (3), Pres. (4), Class Sec'y (1), Class Pres. (2), Tech Reporter (2), Associate Tech Staff (3) (4), "Big T" Staff (3) (4), Press Club, Y.M.C.A. Pres. (2) (3), Football (3) (4).

HORTON H. HONSAKER, Pasadena, Cal., A.I.E.E., Glee Club (3) (4), Y.M.C.A.

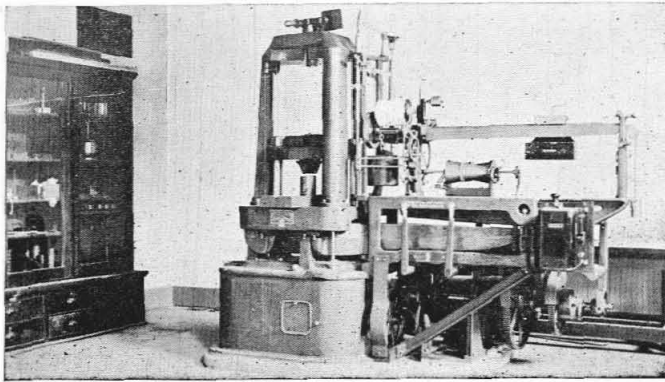
JOSEPH B. MAIER, Glendale, Cal., A.I.E.E., Debating Team (2), Y.M.C.A.

TRUEMAN F. MCCREA, Tengchowfu, Shantung, China, A.I.E.E., Y.M.C.A. Glee Club (3) (4).

CHARLES F. QUIRMBACH, Needles, Cal., Chem. Club Treas. (3), A.I.E.E., Tech Staff (5), "Big T" Staff (4), Assoc. Editor (5), Press Club, Dorm Club, Sec'y (2), Pres. (3).

HENRY I. SCRIBNER, Pasadena Cal., A.I.E.E., "Big T" Staff (3).

# THE 1921 BIG "T"



TESTING MACHINE

## THE 1921 BIG "T"

### GRADUATES IN MECHANICAL ENGINEERING



ROBERT L. DAUGHERTY

specialized knowledge in statical design. The danger in the use of the terms "mechanical," "electrical," etc., is too early specialization. The California Institute of Technology has seen from the first that all engineering is applied science, and that the engineer of today, whatever his specialty, must first of all be rigidly grounded in the principles of Science. This policy is one of our greatest assets as a College of Technology.

**P**ROFESSOR Pupin of Columbia University once defined the mechanical engineer as a man "who makes things go" as contrasted with the civil engineer, the man "who makes things stand." He also said the terms "mechanical," "civil," "electrical," etc., had done more to hurt engineering education than any other thing. It is true that the mechanical engineer is the man called upon to design, or to install, or to recommend the machinery of the world. Much of his work has to do with the theory of machines, and the design of parts which are to move with great speed. To that extent he should be grounded in the mechanics of motion, just as the civil engineer needs to have a highly



## THE 1921 BIG "T"



CLIFFORD POTTS, Santa Ana, Cal., Sigma Alpha Pi, A.S.M.E., Sec'y (4), A.I.E.E., Board of Control (4), Class Pres. (3), Baseball (1) (2) (3) (4), Captain (4).



ALLIN CATLIN, JR., Los Angeles, Cal., Gnome Club, A.S.M.E., Saxophone Quartet (4), Football (4).



JOHN H. HOOD, Pasadena, Cal., A.S.M.E.



ROBERT W. CRAIG, Burbank, Cal., A.S.M.E., Dorm Club Sec'y (4).



EDWARD L. CHAMPION, San Diego, Cal., A.S.M.E., Class Vice Pres. (3) (4), Dorm Club Sec'y (3), Pres. (4), Swimming (3) (4).

## THE 1921 BIG "T"



CHESTER A. BOGGS, Pasadena, Cal., A.S.M.E.,  
Sec'y (3).



EDGAR W. PARMELEE, Pasadena, Cal., A.S.M.  
E., Chairman (4), Bd. of Control (3), Base-  
ball (2) (4).

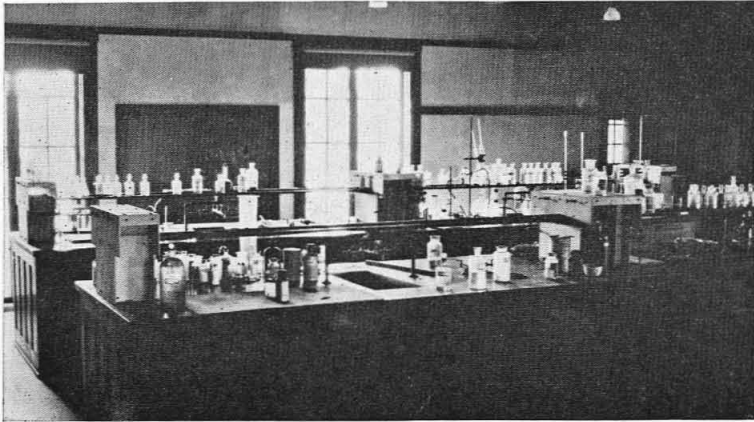


SMITH LEE, Alhambra, Cal., A.S.M.E., Board  
of Control (3).



ERNEST H. MINTIE, Los Angeles, Cal., A.S.M.  
E., Track (2) (3), Basketball (4).

# THE 1921 BIG "T"



SOPHOMORE CHEM LABRATORY

## THE 1921 BIG "T"



DR. A. A. NOYES



DR. R. A. MILLIKAN

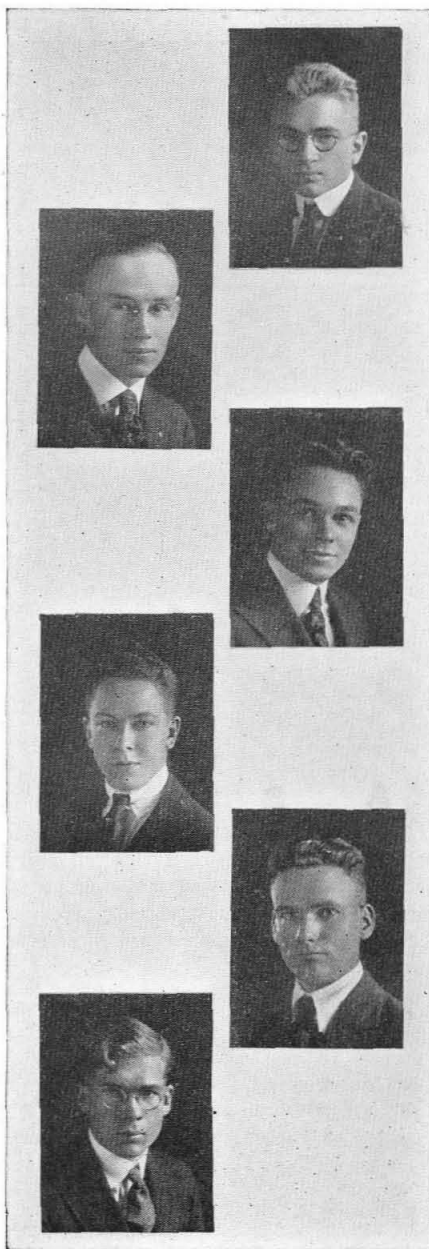
### GRADUATES IN CHEMISTRY, CHEMICAL ENGINEERING AND PHYSICS AND ENGINEERING

**W**HO would attempt to estimate the part played by chemistry in our social order? Everywhere we look we see his fingerprints. Each year industry cries for more of these men to answer the ever increasing number of technical questions. "How can we make better rubber? "How can we improve our steel?" Their number is legion, and it is the chemist who must give the answer. Our own department under the leadership of Dr. Noyes, is doing no small part. Besides supplying yearly its quota of highly trained "industrial scientists," it keeps an able corps of research workers busy on a diversity of important problems.

The physicists under Dr. Millikan have their part, too.

In this connection we cannot help but quote our own Dr. Jewett, "Why particular researches will not recommend themselves to the business men who are responsible for the commercial destinies of the telephone and telegraph systems? It is not of these. The answer is the simple, three-lettered word, 'men.'"

## THE 1921 BIG "T"



RICHARD W. STENZEL, Los Angeles, Cal., *Chemical Eng.*, Chem. Club, Class Pres. (2), Mandolin Club (4), Freshman Prize (1), Football (1) (3) and (4).

WILLARD J. BEMAN, Pasadena, Cal., *Chemical Eng.* (Not graduating).

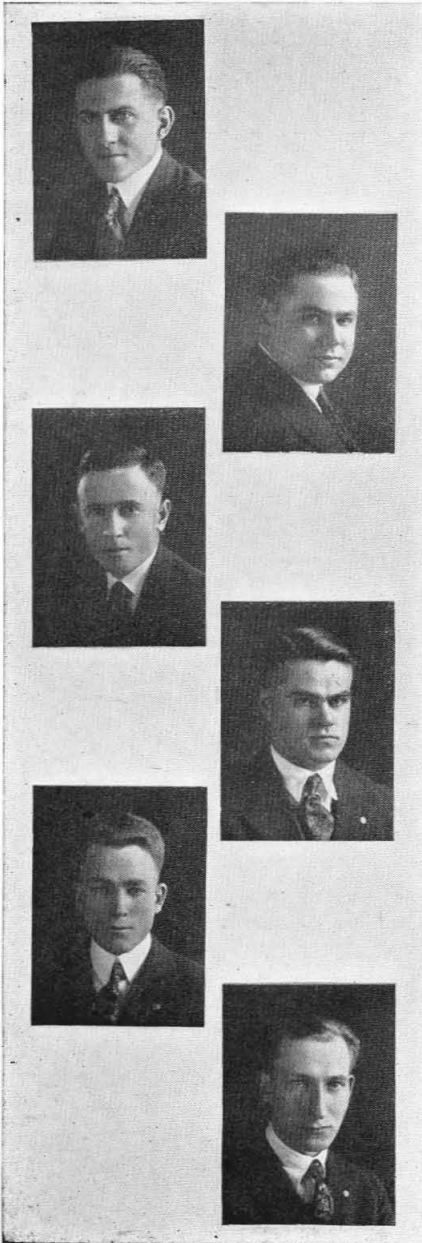
ALFRED J. STAMM, Los Angeles, Cal., *Chemistry*, Chem. Club.

ALBERT L. RAYMOND, Pasadena, Cal., *Chemistry*, Chem. Club.

PHILIP S. CLARKE, Beverly Hills, Cal., *Chemistry*, Chem Club, Tennis (2) (3) (4), Captain (3).

CHARLES F. SIMPSON, Monrovia, Cal., *Chemistry*, Chem. Club.

## THE 1921 BIG "T"



SINCLAIR SMITH, Pasadena, Cal.,  
*Physics and Eng.*, Kappa Sigma  
(Stanford), Physics Club, Bd.  
of Control (2), Editor of  
"Tech" (2), Senior Editor of  
"Big T" (4), Press Club.

ARTHUR L. KLEIN, Los Angeles,  
Cal., *Physics and Eng.*, A.S.  
M.E., "Tech" Reporter (3)  
"Big T" Photographer (4)  
Football (2), Press Club.

JESSE C. BURKS, Venice, Cal.,  
*Chemical Eng.*, Alpha Tau  
Omega (Stanford Chapter),  
Chem. Club Treas. (3), Vice  
Pres. A.S.B. (4), Varsity  
Club Pres. (3), Baseball, (2)  
(3).

MAYNARD S. REYNOLDS, A'ham-  
bra, Cal., *Chemical Eng.*, Chem.  
Club, Baseball (1) (2) (3),  
(4).

HAROLD A. BARNETT, Corona,  
Cal., *Chemical Eng.* (Not grad-  
uating).

CARLTON F. BRIDGE, Para-  
dena, Cal., *Chemical Eng.* (Not  
graduating).

## THE 1921 BIG "T"

Associated Student Body

Classes

Professional Societies

Honor Societies

Fraternities

The Dorm Club

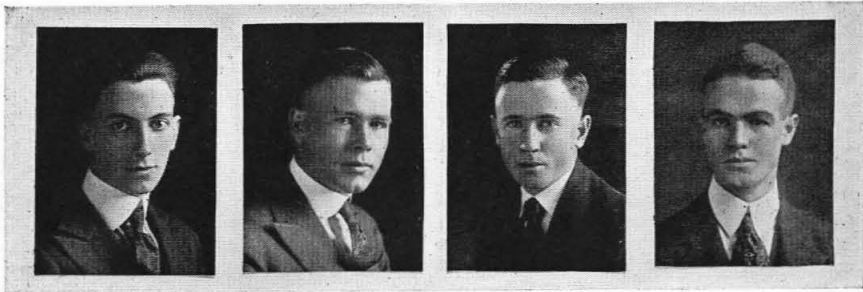
THE 1921 BIG "T"



BOOK IV  
Howard G. Vesper  
Editor



THE 1921 BIG "T"



HARE

HAMBROOK

BURKS

FORGY

## THE 1921 BIG "T"

### THE ASSOCIATED STUDENT BODY



THE Student Body government faced a big task at the beginning of this year—that of the first year under the new Constitution. The "Tech" was edited and put out as in the past by the elected editor and manager, but for the first time it had the sound financial backing of the A. S. B. and turned in a profit when the accounts were closed. The Annual, too, had the A. S. B.'s financial backing.

The budget of the Executive Committee was the largest ever drawn up, and called for total expenditures of over \$3,000, including, however, some permanent supplies, such as office desks and a typewriter.

The A. S. B. and its work, as accomplished through the Executive Committee, has this year been under the leadership of President Hambrook, and the success of his administration speaks for itself as a testimonial to the loyal and efficient services which he has rendered.

The Vice President, Jesse Burks, not only has had his duties in connection with the work of A. S. B. administration, but also has had upon his shoulders the leadership of the Board of Control.

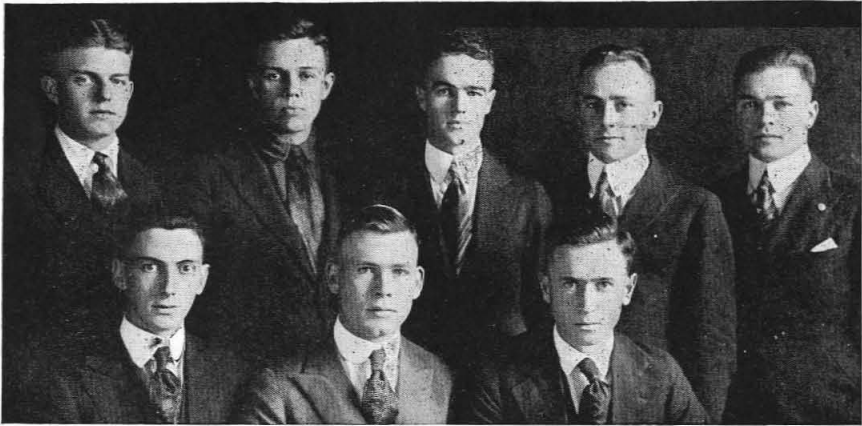
Robert Hare, as Treasurer, has faced considerable detail work in connection with the inauguration of the new triplicate requisition system, and has proved himself to be thoroughly efficient and capable.

The position of Athletic Manager has been handled to eminent satisfaction by Louis Erb, and by his tireless working for the teams, he has showed himself to be the man for the place.

Edward G. Forgy, as Secretary, faithfully kept a "true record of all proceedings" throughout the year.

Beside these five, the Executive Committee has had the Publicity Manager, Howard G. Vesper; two representatives at large, Artemus Hickey and Edward G. Kemp; and, by invitation, the Editor of the Tech, Frederic A. Maurer.

## THE 1921 BIG "T"

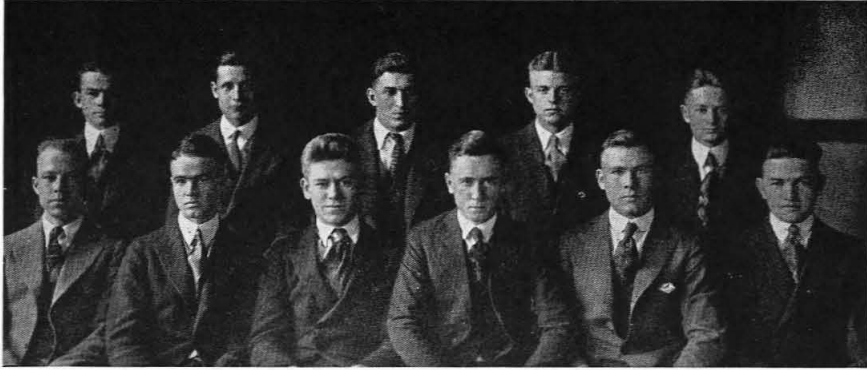


Vesper                      Kemp                      Forgy                      Erb                      Hickey  
Hare                      Hambrook                      Burks

### EXECUTIVE COMMITTEE

*President*.....Richard E. Hambrook      *Athletic Manager*.....Louis H. Erb  
*Vice President*.....Jesse Burks      *Publicity Manager*, Howard G. Vesper  
*Secretary*.....Edward G. Forgy      *Representative*.....Artemus S. Hickey  
*Treasurer*.....Robert Hare      *Representative*.....Edward G. Kemp

## THE 1921 BIG "T"



White                      McKee                      Reeves                      Vesper                      Varney  
Barnes                      Forgy                      Mullin                      Burks                      Hambrook                      Potts

### THE BOARD OF CONTROL

*Chairman, Jesse Burks*

*Senior Representatives*

Manton M. Barnes                      Clifford Potts  
Wynne B. Mullin                      Richard E. Hambrook

*Junior Representatives*

Charles W. Varney                      Hubert G. Reeves  
Howard G. Vesper

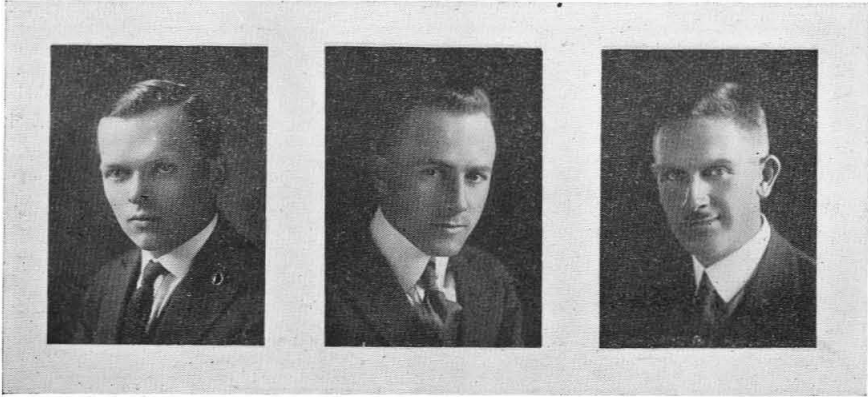
*Sophomore Representatives*

Colin W. Timmons                      George T. McKee

*Freshman Representative*

Danforth White

# THE 1921 BIG "T"



GARFIELD

ERB

PRESTON

## THE JUNIOR CLASS

*President*.....Louis H. Erb

*Vice President*.....Arthur J. Garfield

*Secretary-Treasurer*.....Ray W. Preston

### *Representatives Board of Control*

Hubert A. Reeves

Charles W. Varney

Howard G. Vesper

### *Dance Committee*

### *Decoration Committee*

Arthur J. Garfield

Alfred W. Knight

Farrand Wilson

Donald F. Shugart

G. Kemper Smith

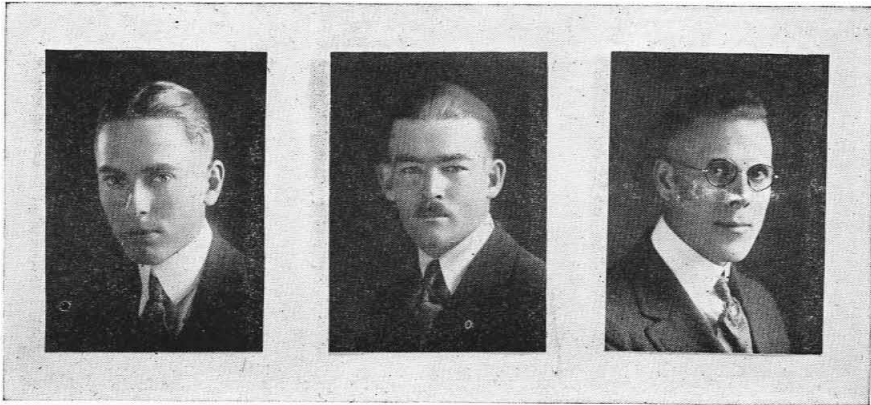
Ben Benioff

Kenneth A. Learned

THE 1921 BIG "T"



## THE 1921 BIG "T"



BRAVENDER

EVANS

VAN PELT

## THE SOPHOMORE CLASS

*President*.....Bernard G. Evans  
*Vice President*.....Richard A. Van Pelt  
*Secretary-Treasurer*.....Norris F. Bravender

### *Class Representatives Board of Control*

George T. McKee

Colin W. Timmons

### *Social Committee*

Harold W. Mead

Jack Cox

Bernard G. Evans

THE 1921 BIG "T"





# THE 1921 BIG "T"



WHITE

GOLDSMITH

GROAT

MITCHELL

## THE FRESHMAN CLASS

*President*.....Fred J. Groat

*Vice President*.....Morris Goldsmith

*Secretary-Treasurer*.....Herbert H. Mitchell

*Class Representative, Board of Control*

Danforth White

*Dance Arrangements*

Danforth White

*Athletic Managers*

Stanley A. Bell

Oliver B. Garver


THE 1921 BIG "T"



# THE 1921 BIG "T"

## FOREWORD

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HE professional clubs at California Tech are constantly in evidence in the life of the institute.

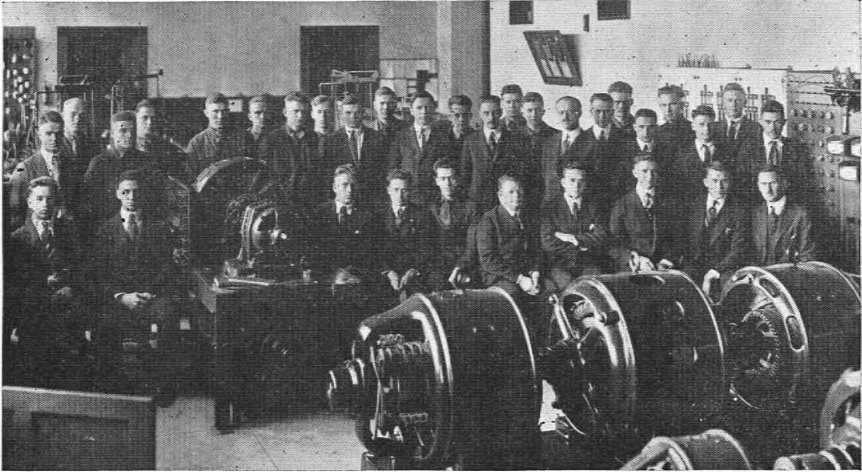
Their activities include the social as well as the technical and many of the year's most pleasant affairs have been sponsored by these societies.

THE 1921 BIG "T"

PROFESSIONAL SOCIETIES



## THE 1921 BIG "T"



### American Institute of Electrical Engineers (Student Branch)

**T**HE Student Branch of the A. I. E. E. has experienced a remarkable growth during the past year. Starting with a nucleus of five members from the 1920 society and with the able assistance of the Electrical Department, the chapter has been built up to a membership of over forty.

Since the first meeting a policy of co-operation with the other technical societies has been the aim and this spirit has dominated all A. I. E. E. activities and technical meetings during the year. A dance given under the auspices of the society at the University of California, Southern Branch, set a new precedent and extended the spirit of co-operation even beyond the Student Body.

The college meetings as well as those of the Los Angeles section of the A. I. E. E. have been well attended and have been a stimulus to the achievements and ambitions of the students.

# THE 1921 BIG "T"

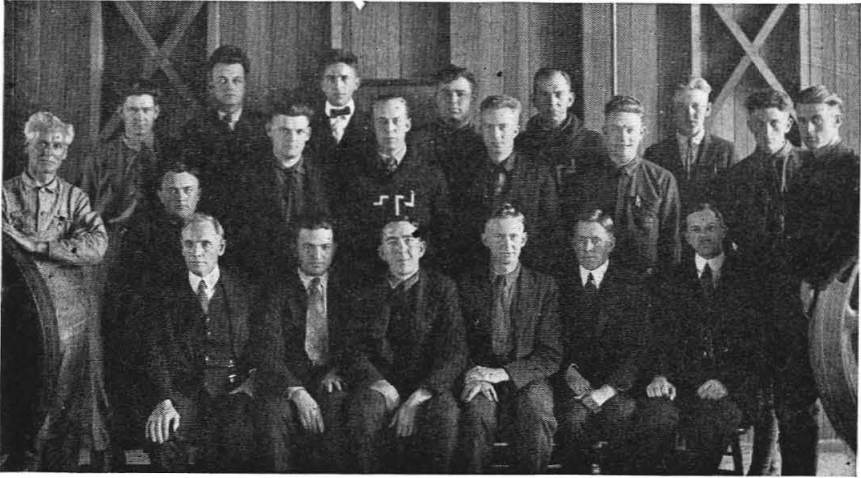
## OFFICERS

*Chairman*.....Ray W. Preston  
*Secretary*.....Lawrence F. Chandler

## MEMBERS

Raymond W. Ager	Joseph B. Maier
Floyd A. Baker	Thomas G. Myers
Garnett H. Barnsdale	Malcolm Macurda
Loren E. Blakeley	Truman F. McCrea
Willis H. Bush	Harold S. Ogden
Henry R. Case	Russell M. Otis
Lawrence F. Chandler	Ray W. Preston
Hueston D. Dagg	Charles F. Quirnbach
Carlton H. Eckerman	Ernest H. Schreiber
Harold S. Endicott	Irving Scribner
Thomas J. Fleming	Richard Urmy Sears
Edward G. Forgy	George K. Smith
Arthur Garfield	Arthur W. Spence
Edmund T. Groat	L. Maynard Stauffer
Robert J. Hare	Charles H. Storms
Arthur L. Herberger	John Paul Stratford
Artemus L. Hickey	Charles P. Walker
Horton H. Honsaker	Fred W. Walter
Frank K. Johnson	John Paul Walter
Clyde R. Keith	Glenn M. Webster
Kenneth A. Learned	Lewis J. Wells
Paul J. Langlie	Will Farrand Wilson
Edward D. Lownes	

## THE 1921 BIG "T"



### American Society of Mechanical Engineers (Student Branch)

The Student Branch of the American Society of Mechanical Engineers has just finished a very active and successful year. Aside from the regular business meetings several meetings were held at which engineers of national reputation spoke to the society. Among the speakers at these several meetings were Mr. Carl C. Thomas of the board of managers of the National A. S. M. E., Mr. Doolittle, chairman of the Los Angeles section, and Mr. Carman, president of the national society.

The Student Branch of the A. S. M. E. has taken its place among the successful societies on the campus. With a well made foundation and a bright future the society will become one of the leading and most important societies in the Institute.

# THE 1921 BIG "T"

## OFFICERS AND MEMBERS

*Honorary Chairman*.....Professor Robert L. Daugherty  
*Chairman*.....Edgar W. Parmelee  
*Vice Chairman*.....Charles F. Stearns  
*Secretary-Treasurer*.....Clifford Potts

Charles J. Biddle

Chester A. Boggs

Alfred C. Catland

Allin Catlin, Jr.

Edward L. Champion

Robert W. Craig

Jay J. DeVoe

Louis H. Erb

Alva C. Hall

John H. Hood

George H. Hopkins

Smith Lee

Laurence C. McMillan

Ernest H. Mintie

Edgar W. Parmelee

Clifford Potts

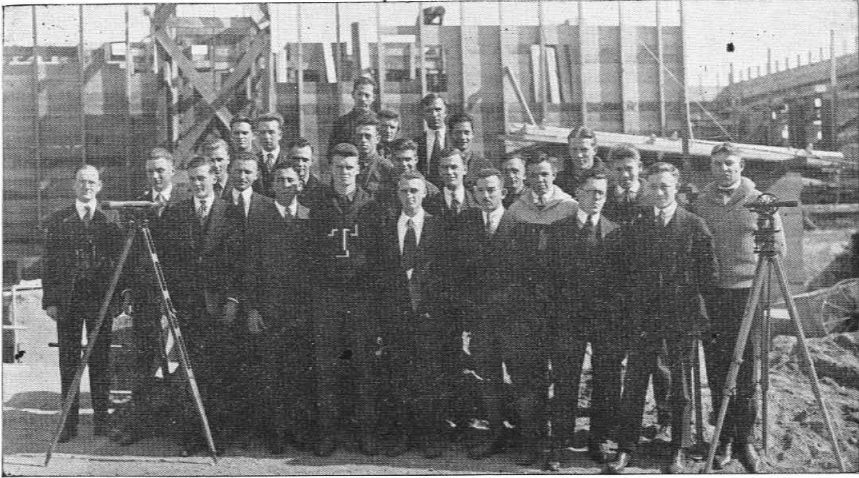
Dewey C. Rohloff

Stanley T. Schofield

Charles F. Stearns



## THE 1921 BIG "T"



### American Society of Civil Engineers (Student Branch)



THE newest of the professional societies on the campus is the Student Branch of the American Society of Civil Engineers. Such an organization has long been needed, but it was only recently that the national society authorized student branches.

The college society aims to secure greater co-operation among the students of civil engineering, to obtain eminent speakers on civil engineering topics, and to keep in close contact with the national society and the work that its members are doing.

Several important meetings have been held and the membership has increased steadily. A good bit of enthusiastic interest has been displayed by a group of live members, and it is expected that in the future the society will become of great value to both its members and the Institute.

# THE 1921 BIG "T"

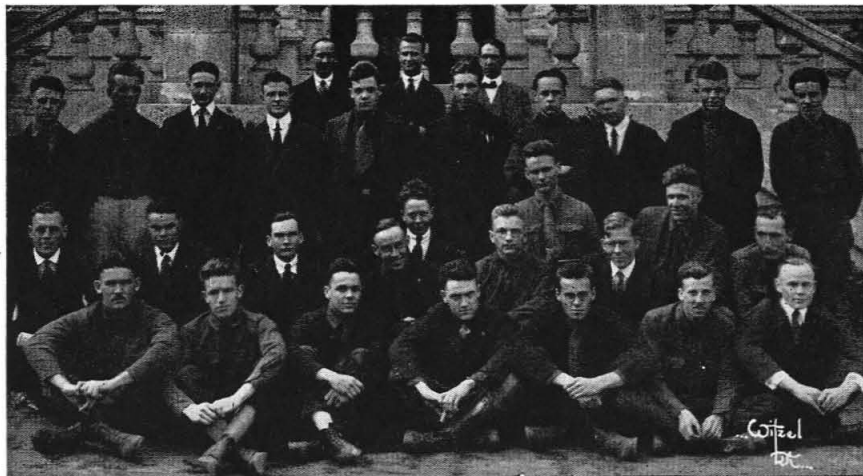
## OFFICERS

<i>President</i> .....	William M. Taggart
<i>Vice President</i> .....	Douglas C. Mackenzie
<i>Secretary</i> .....	John A. Macdonald
<i>Treasurer</i> .....	John Honsaker

## MEMBERS

Jesse Arnold	Frank H. Clough
Joseph Fox	Charles S. Howard
Louis Korn	Whitten P. Davis
Frank C. Makosky	Robert J. Schonborn
Lloyd E. Morrison	Horace V. Gridley
Wynne B. Mullin	Lamberto de la Rocha
Edward D. Seaver	George T. McKee
Harold S. Barhite	William H. Mead
Blake E. Batty	Francis L. North
Ben Benioff	George N. Ramsayer
Edward G. Kemp	Paul H. Thomas
George H. Clever	Robert E. Woods
Quimu J. Lummis	Arnold Blackburn
William D. Potter	Oliver B. Garver
John E. Shields	Morris Goldsmith
Donald F. Shugart	Wesley C. Hertenstein
Delbert D. Smith	Highg Hovaghimian
Douglas A. Stromsoe	William S. Kingsbury
Haigalois Timourian	Kenneth C. McCarter
Ivan L. Tyler	Frank Pine
Lloyd A. Walling	Earl V. Studebaker
Martin J. Wesseler	Kenneth L. Whaley
Horace W. Baker	

## THE 1921 BIG "T"



## THE CHEM CLUB

**D**URING the past year the Chem Club has held a meeting each Monday noon, where the members ate lunch together—the lunch usually being reinforced by coffee and doughnuts served by the Club—and held informal discussions and became better acquainted generally. The last half hour of each meeting was devoted to a short talk by some member of the Club on some subject of chemical interest with which he was familiar.

The social activities of the Club included the successful Kem Klub Karnival, and a week-end trip to Forest Home, in the San Bernardino Mountains. The past year has been a very pleasant and profitable one for the Chem Club and plans are already being formulated to make next year even more successful.

# THE 1921 BIG "T"

## OFFICERS

<i>President</i> .....	Alfred W. Knight
<i>Vice President</i> .....	Robert Gillies
<i>Secretary</i> .....	Frederic A. Maurer
<i>Treasurer</i> .....	Walter A. Moore

## MEMBERS

Dr. Arthur A. Noyes	Alfred W. Knight
Dr. Stuart J. Bates	Frederic A. Maurer
Dr. James E. Bell	Charles F. Ritchie
Mr. Howard J. Lucas	Howard G. Vesper
Dr. William N. Lacey	Lester O. Warner
Robert S. Bolan	Willard E. Baier
Richard M. Bozarth	Sydney A. Banks
Harold A. Barnett	Bernard G. Evans
Willard J. Beman	Robert C. Hastings
Jesse Burks	Fred C. Henson
Philip S. Clarke	Donald H. Loughridge
Charles F. Quirnbach	Walter T. Moore
Maynard S. Reynolds	Archie McKaig
Charles F. Simpson	Henry T. Nies
Alfred A. Stamm	Millard J. Russell
Richard W. Stenzel	Paul S. Stoutenburgh
Park L. Turrill	Willard H. Tracy
Frank R. Bridgeford	Richard A. Van Pelt
Gordon A. Alles	Gerald A. Amos
Richard M. Badger	John F. Blackburn
Robert Gillies	Hollis W. Moyse
Albert D. Hall	Oliver B. Garver

George N. Hawley

# THE 1921 BIG "T"

## RADIO CLUB

**T**HE Radio Club on obtaining a new license this year started to work to install a complete equipment of radio instruments. Formerly the different parts of the apparatus used were privately owned, thus necessitating the dismantling of the set at the close of each year. This year, however, the Club has endeavored to make up a complete set which will remain the property of the Institute. A continuous wave transmitter and wireless telephone with a vacuum tube receiver have been designed and are under construction by members of the Club, who are keenly interested and are working hard to make the organization a creditable asset in the life of the Institute.

The Club is made up of the following members:

Harold L. Albright	Edgar M. DeRemer
Kenneth B. Anderson	Frederick J. McClung
Everett D. Barcus	Lewis M. Mott-Smith
John F. Blackburn	Ernst H. Schreiber
Harold R. Beck	Robert E. Woods
Daniel M. Campbell	George C. Henny

## PHYSICS CLUB

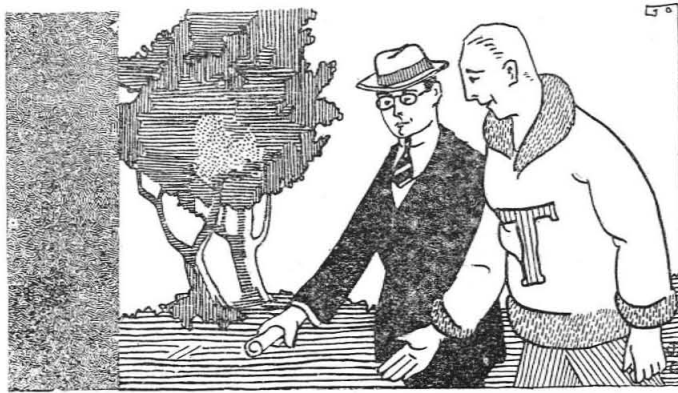
**T**HE Physics Club, a co-operative enterprise carried on by the Physics Department of the Institute and the physicists of the Mt. Wilson Solar Observatory, has held a meeting each week during the year for the discussion of research carried on by the members as well as the research work reported in the physical science journals.

The Club has endeavored to keep in touch with the advances which are being made in physics not only at the Institute and the Observatory, but elsewhere as well, to foster the research atmosphere and spirit in the Institute, and by mutual interchange of ideas to broaden and enliven the work of the members.

The past year has been a year of achievement and the Club has proven itself a most valuable asset of the Institute.

THE 1921 BIG "T"

HONOR SOCIETIES



# THE 1921 BIG "T"



## THE VARSITY CLUB



### OFFICERS

<i>President</i> .....	Alfred C. Catland
<i>Vice President</i> .....	Howard G. Vesper
<i>Secretary-Treasurer</i> .....	Hubert A. Reeves

**T**HE Varsity Club entered into the second year of its life at California Tech by giving a dance at the Hotel Maryland on November the sixth. This dance was acclaimed as a huge success by all those who were lucky enough to have attended. The proceeds were used to buy the football letter men ruff-neck sweaters. It is hoped that this custom will become a tradition at California Tech and be one of the Varsity Club's annual events.

Each year as the college grows and athletics become more firmly established, in spite of the limited time allotted to them, the Varsity Club grows in proportion and its members act as a single group to foster a clean sportsman-like attitude, both in the rooters and the contestants. The student body knowing that the members of the Varsity Club, in order to become members, have to have the welfare of the college athletics at heart are willing to accept the decisions of the Club in regard to all questions arising between the faculty and the student body over athletics and their proper functioning. This makes it possible for the Varsity Club to render service to the student body by seeing that the efforts of those taking part in the inter-collegiate sports are directed so as to bring the greatest amount of glory to their Alma Mater.

The insignia adopted by the Varsity Club is a small gold "T" with the word *Varsity* engraved across the top.

## THE 1921 BIG "T"



### MEMBERS

F.—Football; B.—Baseball; T.—Track; Bk.—Basketball; S.—Swimming.  
Tn.—Tennis.

Alcock, J.....B.	Mintie, E.....T., Bk.
Benioff, B.....T.	Myers, T. ....S.
Burks, J. ....B.	Mullin, W. ....F.
Bugbee, J. ....F.	Macdonald .....B.
Catland, A. ....F.	Potts, C. ....B.
Clough, F.....T.	Preston, R.....T.
Crissman, R. ....T.	Priddy, R.....B., Bk.
Catlin, A.....F.	Payne, L.....F., Bk.
Cox, J. ....T.	Parmelee, E.....B.
Davis, W. ....F., B.	Reynolds, M.....B.
Evans, B. ....F., S.	Rohloff, D. ....F.
Groat, E.....F., B., T.	Reeves, H. ....T.
Hickey, A..F., Bk., S.	Schneider, W..B., Bk.
Herberger, A.....S.	Starr, E.....S.
Hambrook, R. ....F.	Seares, R. ....S.
Honsaker, J.....Tn.	Symons, L.....F., T.
Hastings, R. ....T.	Stenzel, R.....F.
Kemp, G.....F., B., T.	Shugart, D.....Tn.
Klein, A.....F., S.	Timmons, C.....Bk.
Kohtz, R.....Tn.	Vesper, H. ....Bk.
Lynn, F. ....Tn.	Webster, G.....F.
Larson, L.....B., Bk.	Weitekamp, E. ....B.
Lummis, Q. ....S.	Wilson, F.....F.



# THE 1921 BIG "T"

## THE PRESS CLUB



THE beginning of the year 1921 found a Press Club an actual reality among the undergraduate associations of the Institute. The club was organized for the pleasure and interest of the men who have been the most instrumental in making the college publications, THE CALIFORNIA TECH and THE BIG T what they are today. Among the charter members are three former editors of the "Tech," as well as the editor for the year 1920-21.

Active members must be from the upper classes, and must have contributed to one or the other of the two college publications. The membership is thus limited in order that the Club may have greater unity and a more dignified purpose in view, as well as to inspire greater literary activity among the underclassmen staff members.

The program of the club as outlined in the Constitution is "the promotion of literary activity in the Institute, as affecting the quality of reading matter in the student publications, the stimulation of active rather than passive interest of all Institute men in their newspaper and annual, and the forging of closer ties among the members of the staffs."

A number of interesting and enjoyable meetings have been held during the year. The Club has proven its value, and with such a broad purpose and such an interested group of members, the Press Club will doubtless become one of the most worth while organizations at "Tech."

### OFFICERS

*President*.....Douglas A. Stromsoe  
*Vice President*.....Robert Gillies  
*Secretary*.....Clyde R. Keith  
*Treasurer*.....George T. McKee

#### *Honorary Members*

Professor Clinton K. Judy    Professor George R. McMinn

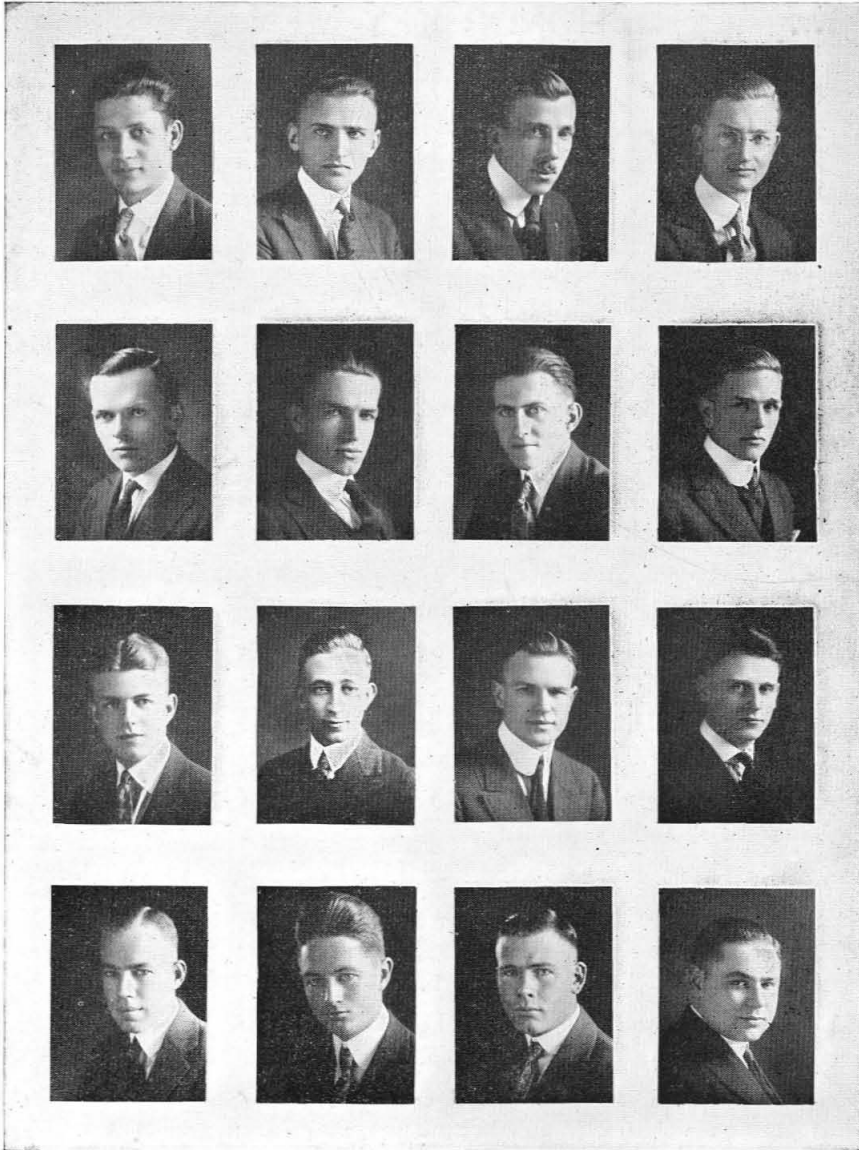
#### *Charter Members*

Max Alcorn	George T. McKee
Arthur J. Garfield	Sinclair Smith
Robert Gillies	Douglas A. Stromsoe
Clyde R. Keith	Howard G. Vesper
Frederic A. Maurer	Lester O. Warner

#### *Initiates*

Manton M. Barnes	Arthur L. Klein
Ben Benioff	Charles Quirnbach
Richard E. Hambrook	Charles W. Varney

# THE 1921 BIG "T"



McKee  
Garfield  
Vesper  
Barnes

Stromsoe  
Maurer  
Benioff  
Varney

Gillies  
Smith  
Warner  
Hambrook

Keith  
Alcorn  
Quirnbach  
Klein

## THE 1921 BIG "T"

### HONOR KEY MEN

Richard E. Hambrook, Y.M.C.A. (1), Football (1), Pres. A.S.B. (6), Board of Control (3), Club mem. (1), Annual Staff (3), Tech Staff (2). Total 19 points.

Edward G. Forgy, Y.M.C.A. (1), Sec. A.S.B. (5), Pres. Senior Class (4), Club mem. (1), Annual Staff (4). Total 15 points.

Manton M. Barnes, Band leader (2), Board of Control (3), Mgr. of Annual (5), Glee Club (2). Total 12 points.

Wynne B. Mullin, Football (3), Board of Control (3), Club mem. (1), Annual Staff (3), Glee Club (2). Total 12 points.

Charles W. Varney, Tech mgr. (5), Adv. mgr. Annual (4), Board of Control (3). Total 12 points.

Arthur J. Garfield, Vice-Pres. Junior Class (2), Club mem. (1), Editor of Annual (6), Tech Staff (3). Total 12 points.

Frederic A. Maurer, Club officer (2), Editor of Tech (6), Annual Staff (4), Dorm Club off. (1). Total 13 points.

Ben Benioff, Track (3), Annual Staff (3), Tech Staff (3), Football (2), Club mem. (1). Total 12 points.

Louis H. Erb, Athletic mgr. (5), Yell leader (3), Pres. Junior Class (3), Club mem (1). Total 12 points.

Robert Gillies, Mng. Editor of Tech (5), Annual Staff (4), Club officer (2), Track (2). Total 13 points.

Edward G. Kemp, Track (5), Baseball (3), Rep. at large (3), Club mem. (1). Total 12 points.

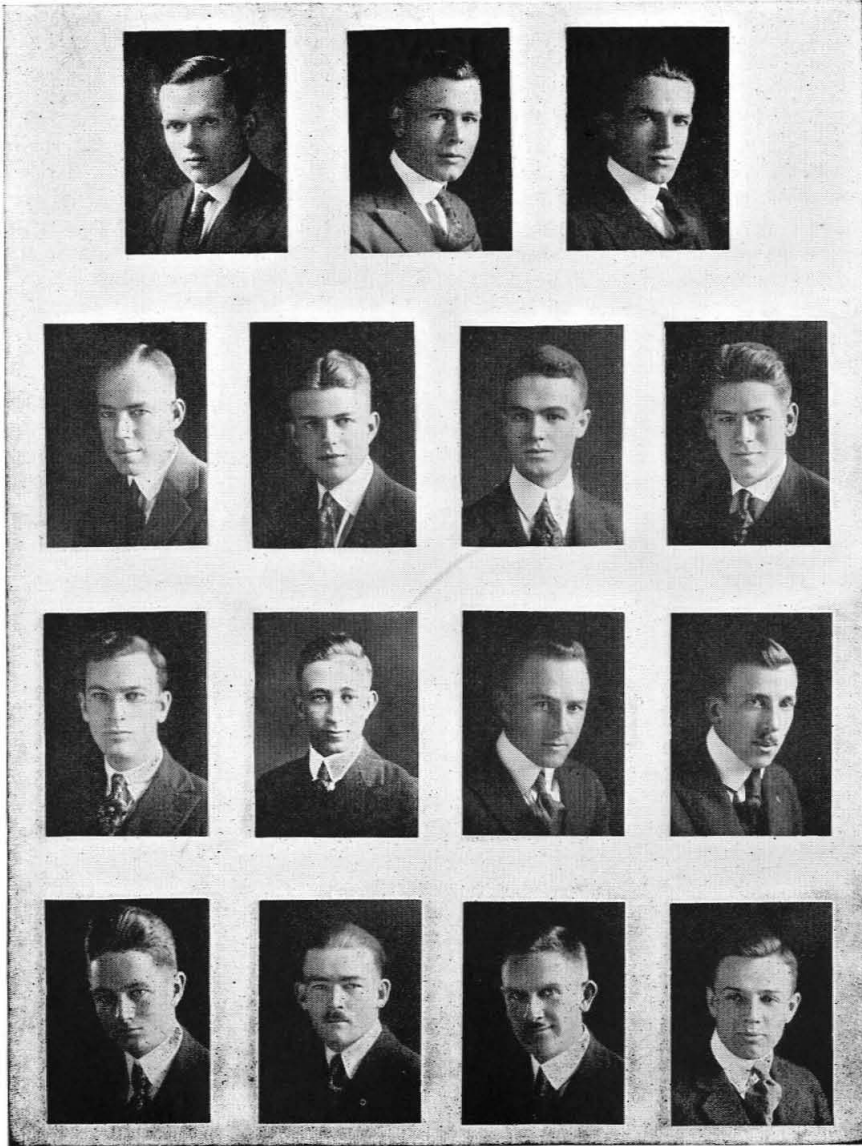
Douglas C. Mackenzie, Y.M.C.A. (1), Glee Club (4), Annual Staff (3), Tech Staff (3), Track (2), Club mem. (1). Total 14 points.

Ray W. Preston, Annual Staff (4), Tech Staff (4), Sec. Junior Class (2), Club. Pres. (2), Track (2). Total 14 points.

Howard G. Vesper, Publicity Manager (4), Annual Staff (4), Board of Control (3), Tech Staff (3), Basketball (3), Glee Club (2), Club mem. (1). Total 20 points.

Bernard G. Evans, Football (3), Pres. Sophomore Class (3), Annual Staff (3), Track (2). Club mem. (1). Total 12 points.

# THE 1921 BIG "T"



Barnes  
Mackenzie  
Varney

Garfield

Vesper  
Benioff  
Evans

Hambrook


Forgy  
Erb  
Preston

Maurer

Mullin  
Gillies  
Kemp

# THE 1921 BIG "T"

## HONOR KEY SYSTEM

 HIS year has seen the introduction of many new organizations and customs at Tech. However, none is calculated to have so far reaching an effect upon student life as the Honor Point System. Briefly, the plan provides an appropriate recognition to those students who have contributed most to the success of student activities. Honor points are given as provided by the student body constitution for participation in the various activities of the college. Those men receiving twelve points or over in one year are awarded an honor key. Exception is made of the editors of the Annual and Tech and of the Student Body president; who receive a key by winning six points in one award.

The winning of an honor key is an end well worth striving for, as is evidenced by the number of men who will receive them this year. There has been a noticeable increase in the number of men taking part in athletics. Next year the result should be even more marked.

There is a standing committee which has charge of the honor point records. The committee is also looking after the choosing of a design. Its members this year are: E. L. Morrison, F. C. Makosky, H. H. Honsaker.

### HONOR POINT HONORABLE MENTION

#### 11 POINTS

George T. McKee  
Jack Cox  
Arthur L. Herberger

#### 10 POINTS

Allin Catlin  
Clifford Potts  
Edmund T. Groat  
Loren E. Blakeley  
Douglas A. Stromsoe

#### 9 POINTS

Whitton P. Davis  
Robert J. Hare  
Jesse Burks  
Richard U. Sears

#### 8 POINTS

Lloyd E. Morrison  
Earnest H. Mintie  
Lloyd A. Walling  
Artemas S. Hickey

#### 7 POINTS

Edward L. Champion  
Alfred C. Catland  
Charles F. Quirnbach  
John Honsaker  
Warren A. Schneider  
Ernst H. Schreiber  
Glen M. Webster  
James M. Bugbee  
Richard A. Van Pelt

#### 6 POINTS

Jesse Arnold  
Richard W. Stenzel  
Linne C. Larson  
Hubert A. Reeves  
Farrand Wilson  
Leonard B. Payne  
Russell J. Priddy  
Colin W. Timmons  
Fred J. Groat

THE 1921 BIG "T"

F R A T E R N I T I E S



# THE 1921 BIG "T"

## THE GNOME CLUB (Kappa Gamma)

Founded 1896

House: 351 South Euclid Avenue

### *Faculty Members*

Capt. Paul Perigord	Prof. Clinton K. Judy
Prof. Harry C. Van Buskirk	Prof. Stuart J. Bates
Mr. Edward C. Barrett	Prof. Romeo R. Martel
Prof. Robert L. Daugherty	Prof. Royal W. Sorenson
Prof. Lucien H. Gilmore	Prof. Howard W. Clapp
Mr. Raymond F. Call	Mr. Walter W. Ogier
Mr. W. W. Martin	Mr. O. L. Heald
Mr. A. F. Hall	Mr. Russell M. Otis

### *Nineteen Hundred and Twenty-one*

Manton M. Barnes	Edward G. Forgy	Gerald A. Lavagnino
Allin Catlin, Jr.	Richard E. Hambrook	Lloyd E. Morrison
	Robert J. Hare	

### *Nineteen Hundred and Twenty-two*

Alfred C. Catland	Artemus S. Hickey, Jr.	Richard U. Seares
Louis H. Erb	Linne C. Larson	Charles W. Varney
Edmund T. Groat	Ray W. Preston	Howard G. Vesper

### *Nineteen Hundred and Twenty-three*

James M. Bugbee	Robert M. Gray	L. Maynard Stauffer
Willis H. Bush	George I. Hickey	Colin W. Timmons
	Leonard B. Payne	

### *Nineteen Hundred and Twenty-four*

Harold R. Beck	Edward E. Dorrestein	Fred J. Groat
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### *Pledges*

Russell J. Priddy	William H. Mead
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# THE 1921 BIG "T"



Hare  
Catland  
A. Hickey  
Grey  
Payne

Barnes  
Erb  
G. Hickey  
Varney  
F. Groat

Timmons  
Bugbee

Catlin  
E. Groat  
Vesper  
Preston  
Beck

Forgy  
Morrison  
Otis  
Bush  
Dorrestien

Lavagnino  
Hambrook  
Seares  
Larson  
Stauffer



# THE 1921 BIG "T"

## SIGMA ALPHA PI

Founded 1914

House: 399 South Mentor Avenue

### *Honorary Members*

Dr. William N. Lacey  
Capt. Hans Kramer

Prof. Franklin Thomas  
Prof. George R. McMinn

### *Nineteen Hundred and Twenty-one*

Clifford C. Potts                      Frank C. Makosky                      Wynne B. Mullin

### *Nineteen Hundred and Twenty-two*

Douglas A. Stromsoe	Glen M. Webster	Robert Gillies
Lloyd A. Walling	Arthur J. Garfield, Jr.	Alfred W. Knight
John A. Macdonald	Edward G. Kemp	G. Kemper Smith
Lester O. Warner	William M. Taggart	Frederic A. Maurer

### *Nineteen Hundred and Twenty-three*

Whitton P. Davis	Bernard G. Evans	Paul H. Thomas
Richard A. Van Pelt	Roy O. Elmore	Walter T. Moore
	David G. Harries, Jr.	

### *Nineteen Hundred and Twenty-four*

Edgar C. Evans	Hollis W. Moyses	*Earl V. Studebaker
Oliver B. Garver		Glenn M. Schlegel

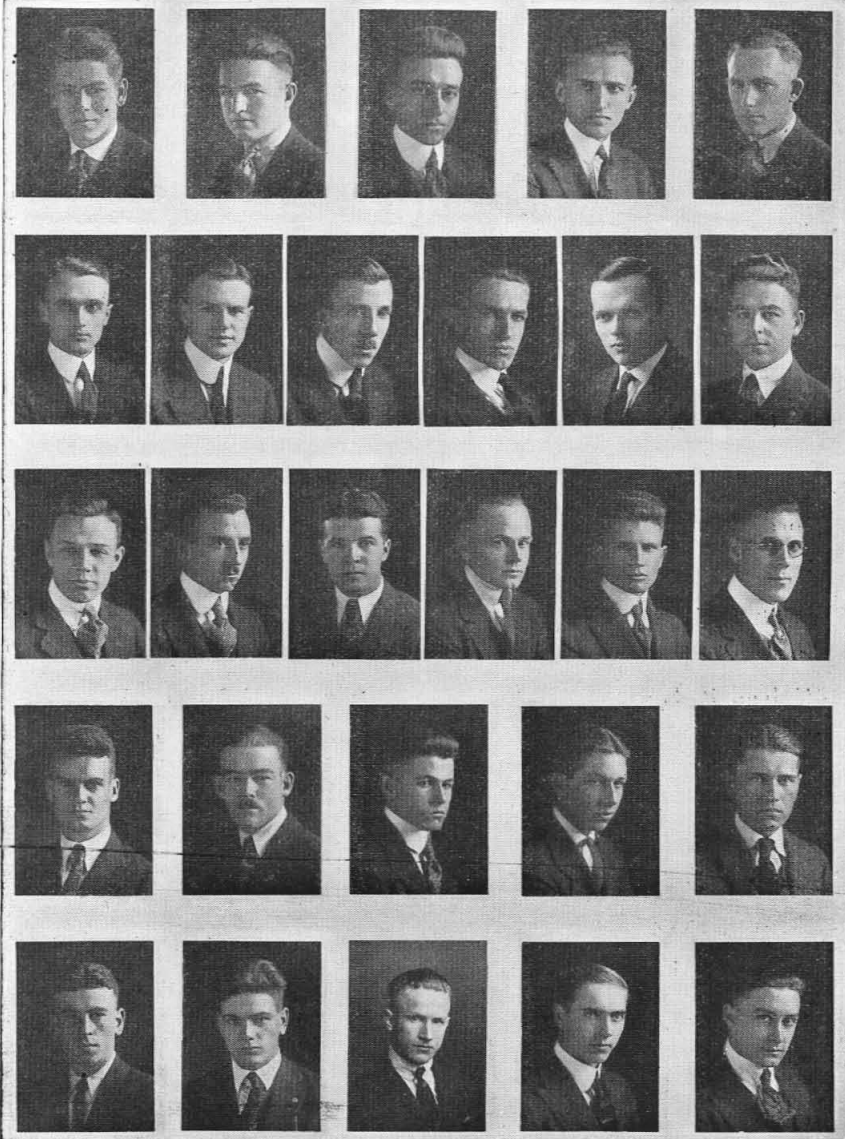
### *Pledge*

Charles Howard, '23.

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\*Deceased.

# THE 1921 BIG "T"



Mullin  
Walling  
Kemp  
Davis  
Garver

Potts  
Warner  
Taggart  
B. Evans  
Moyses

Makosky  
Gillies  
Smith  
Maurer  
Knight  
Harries  
Studebaker

Stromsøe  
Garfield  
Macdonald  
Moore  
Schlegel

Webster  
Elmore  
Van Pelt  
Thomas  
E. Evans

# THE 1921 BIG "T"

## PHAROS

Founded 1921

### *Faculty Members*

Dr. A. A. Noyes

Dr. E. C. Watson

Dr. Clyde Wolfe

Mr. E. H. Swift

### *Nineteen Hundred and Twenty-three*

Norris F. Bravender

Merle Kirkpatrick

Bentley Copeland

George C. Kuffel

Leland D. Fowler

Donald H. Loughridge

Alva C. Hall

George N. Ramsayer

William P. Hand

Stanley T. Schofield

Basil Hopper

Hubert K. Woods

Grant V. Jenkins

### *Nineteen Hundred and Twenty-four*

John F. Blackburn

Cedric L. Scott

Albert S. Gould

Charles A. Storms

Clifford W. Maltby

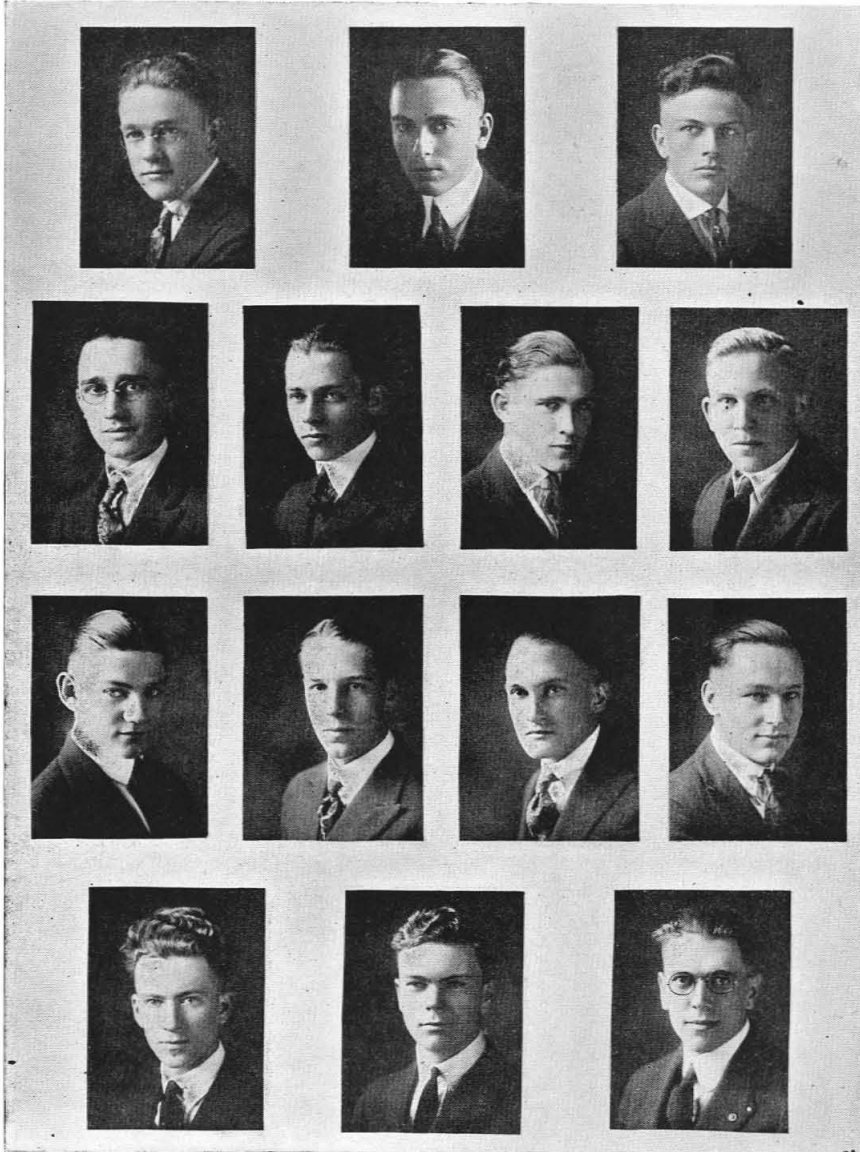
Frank D. Tellwright

Harold F. Pope

Kenneth L. Whaley

Charles W. Punton

# THE 1921 BIG "T"



Loughridge	Hall	Stoughtenburgh	Bravender	Fowler	Schofield	Punton
Hand	Woods	Gould	Whaley	Pope	Jenkins	Hopper

# THE 1921 BIG "T"

## PI ALPHA TAU

Founded 1921

### *Faculty Members*

Dr. Walter T. Whitney

Mr. Fred J. Converse

Mr. Robert G. Wulff

### *Nineteen Hundred and Twenty-three*

Jack Cox

Ben Bear

### *Nineteen Hundred and Twenty-four*

Alfred Bonnett

Edward Lownes

Rex Clark

Frank Pine

Morris Goldsmith

Willis Squires

Albert Hickox

Danforth White

# THE 1921 BIG "T"



White  
Bonnett  
Lownes

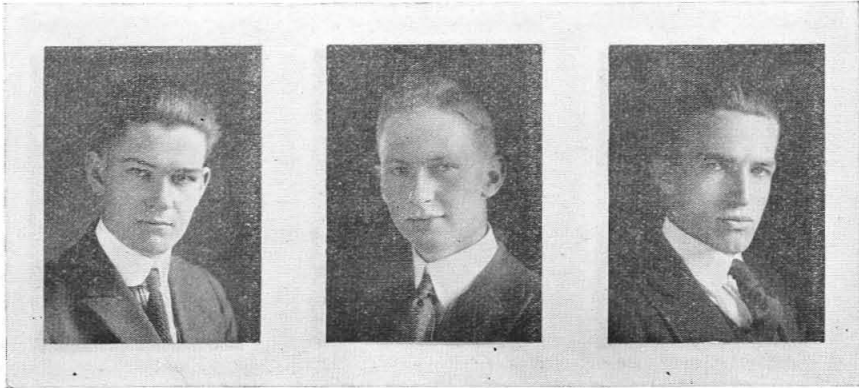
Converse

Clark  
Hickox  
Cox

Wulff

Goldsmith  
Squires  
Pine

## THE 1921 BIG "T"



ROBT. CRAIG  
Secy.-Treas.

ED. CHAMPION  
President

FRED. MAURER  
Vice-Pres.

JACK COX, Vice-Pres. (Third Term)

## THE DORM CLUB

**O**NE of the largest and livest of the student organizations at Tech is the Dorm Club, composed of all the students who live at the Institute dormitory. They are some sixty in number, and throughout the year have many times shown themselves to be the backbone of support for Tech activities. Living in such close proximity to the scene of affairs, it is only natural that they should take a big interest in the things that are going on.

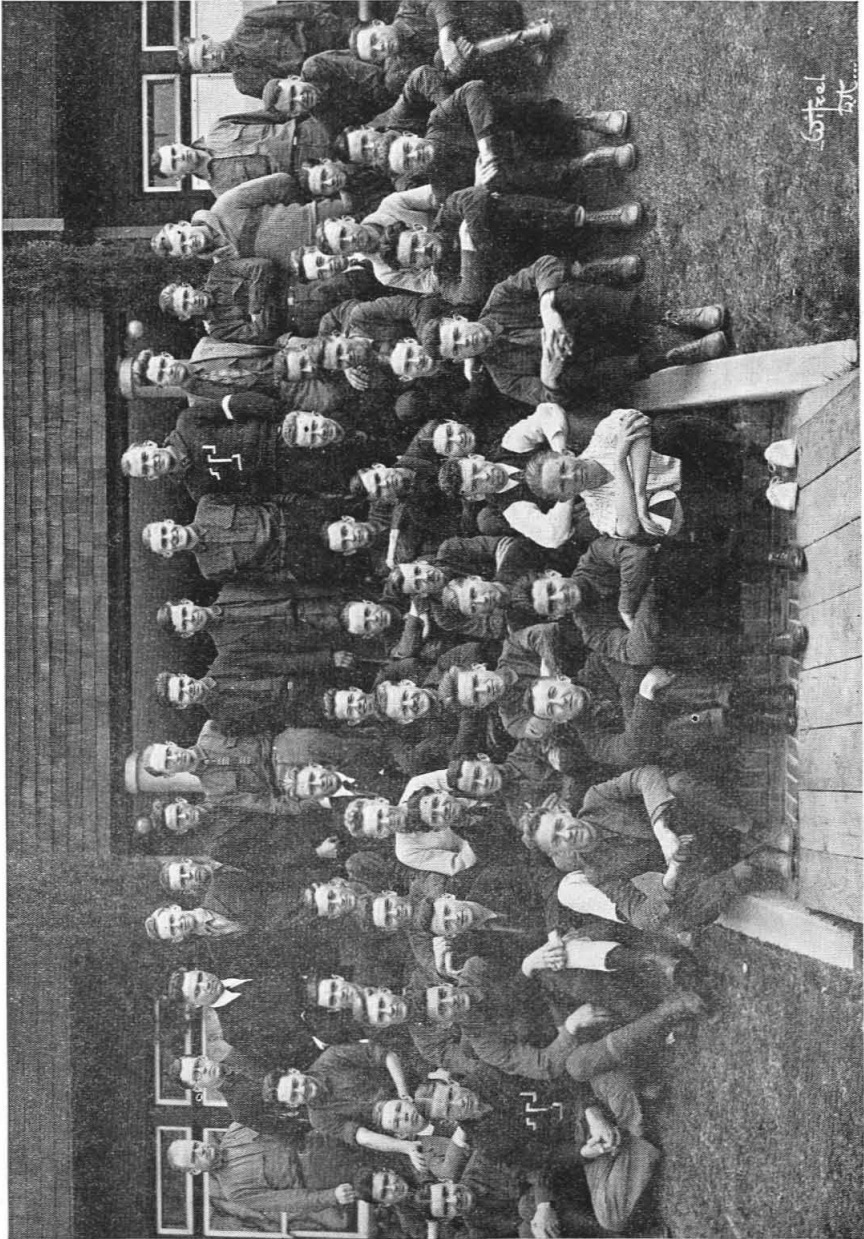
### Members

Ramseyer, G. M.  
Schofield, S.  
Hall, A. C.  
Pine, Frank  
Lownes, E. D.  
McKaig, A.  
Hawley, G. M.  
Biddle, C. J.  
Starr, E. J.  
Beck, H. R.  
Bugee, J.  
Goodhue, H. W.  
Smith, D. D.  
Taylor, W. D.  
Baker, F. A.  
Klein, A. L.  
Goldsmith, M.

Russell, M. J.  
Atherton, T.  
Kingsbury, W. S.  
Campbell, D.  
Cox, Jack  
Harries, D. G.  
Hovaghimian, H.  
Bangham, W. L.  
Thomas, T. C.  
Springer, H.  
McClung, E. J.  
Wilson, R. C.  
Mayer, J.  
Crissman, R. J.  
Darnell, D.  
White, Danforth  
Burks, Jesse


Duncan, S. F.  
Albright, H. L.  
Warren, H.  
Eckermann, C. H.  
Liddell, O. E.  
Bell, S. A.  
Endicott, H. S.  
Rohloff, D.  
Benioff, B.  
Maltby, C.  
Weitecamp, E. L.  
Craig, Robert  
Hoyt, J.  
Tracy, H. F.  
Amos, G.  
Batty, B. E.  
Quirnbach, F.

THE 1921 BIG "T"





## THE 1921 BIG "T"

THLETICS at a  
Technical College  
are like studies, at  
other colleges they must  
not interfere with one's  
education.

THE 1921 BIG "T"



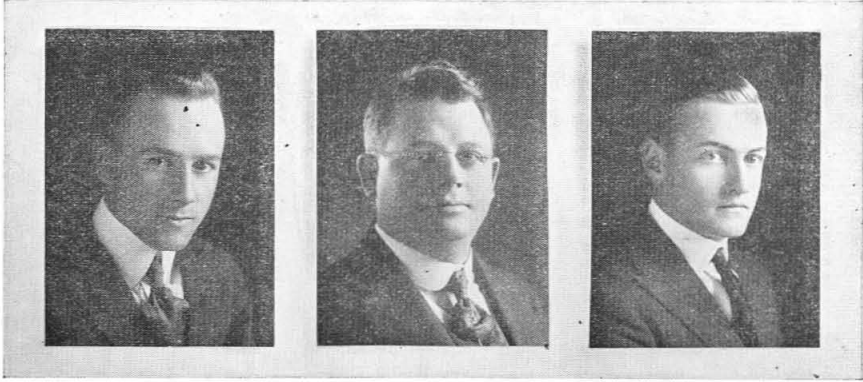
# ATHLETICS

BOOK V

Frederic A. Maurer  
Editor

Page One Hundred  
Thirty-nine

## THE 1921 BIG "T"



LOUIS ERB  
Athletic Manager

PROF. SORENSON  
Advisor

ROBERT GRAY  
Assistant Manager

### SOUTHERN CALIFORNIA INTERCOLLEGIATE CONFERENCE

*By Royal W. Sorenson*



VERY American college of standing realizes that a well educated man is educated physically as well as mentally and spiritually. Living conditions in these days of automobiles and other modern conveniences make it necessary for colleges to provide means whereby its students may get in an artificial way the physical education which was once a part of every young man's natural life. College sports and intercollegiate competitive games provide a means of expression and development for the vigorous students who are skillful enough to participate on representative teams, but they are not a proper substitute for a physical education program, though they may properly be a part of it. Intercollegiate competition also forms a nucleus about which an entire student body may build many of its college traditions, and it forms a medium through which the student body members as "rooters" may give expression to their college loyalty, a function of no small importance because it may be so largely instrumental in instilling in the newer students a spirit of loyalty which will be a valuable asset through life.

Again, intercollegiate sports provide a channel through which the old "grads" and the college-supporting community may receive a touch of the college life with its enthusiasm of youth and be thereby stimulated and refreshed for new endeavor in the serious business of life in which they are

## THE 1921 BIG "T"

engaged. These graduates and the public, having once experienced the thrill of this contact, demand it often and without reason. The gambler has found in the activity incidental to intercollegiate competition a chance to apply his trade; the merchants of the community and, unfortunately, the colleges in some cases, have found it an advertising medium of value.

These are real difficulties, but they are outweighed by the good and the fact still remains that the lessons gained by engaging in these sports are so valuable as to make it desirable for every student to have opportunity to participate in some form of athletic competition which involves team work. For this reason an appropriate athletic program should be encouraged.

In Southern California there are six colleges and small universities operating under very similar conditions in many ways. The faculties of these institutions are in accord regarding the status of intercollegiate competition and college sport, in that they consider them a part of a general physical education program which, in turn, is but a limited part of an entire college curriculum.

Also these faculties think they are in a better position to determine upon a program in keeping with the ideals and welfare of the college than are students who remain but a college generation; moreover, it is the belief of these faculties that what is good for one is good for all.

On this basis, the Southern California Intercollegiate Conference was organized more than seven years ago and so harmonious has it been in all its operations as to leave no doubt regarding the soundness of the things for which the Conference stands.

For the guidance of its members a printed constitution has been drawn up and this constitution has never in any way been considered a set of blue laws to be enforced upon some members of the Conference by the other members.

So complete has been the effort at co-operation in the observance of this constitution by faculty and students of the institutions making up the Conference that each has implicit trust in the intentions of the other colleges. Thereby hangs the record of its success, for it has been a factor of no small note in the upbuilding of the proper kind of college athletics in Southern California and along the Pacific Coast.

The members of this Conference are: California Institute of Technology; Occidental College; Pomona College; Southern Branch, University of California; University of Redlands; Whittier College.

## THE 1921 BIG "T"

### COACH SAM TENNISON

Coach S. A. Tennison came to the California Institute of Technology with a very good record from Springfield College, Springfield, Illinois. He has had charge of the football and track squads, and has had a fairly successful year. Coach Tennison also directly supervised the work of the Freshmen and Sophomore gymnasium classes.

### COACH RAY CALL

Coach Ray Call, who graduated from the California Institute of Technology, then Throop College, in 1915, had charge of the basketball and track squads during the past year. As an active participant in the athletic activities of Throop College, he perhaps more than any other man realizes the peculiar athletic situation at the Institute.

# THE 1921 BIG "T"

## THE ATHLETIC YEAR

*By Frederic Maurer*

**D**URING the 1920-21 athletic season, the California Institute of Technology not only upheld its reputation for fair, clean play and good sportsmanship, but established an even higher standard of athletic conduct for the guidance of future Tech athletic teams. Here at Tech, if at any Institution, must the athlete be guided, not by the selfish interest of personal popularity, but by the noble one of service to his Alma Mater. In so far as Tech men have been guided by this principle, the California Institute of Technology has had a very successful season.

In the matter of winning athletic contests, which after all seems to be the criterion of success or failure, Tech has been fairly successful, and has really done better than could reasonably have been expected. With time for practice reduced to a minimum, and the "wee, sma' hours o' the night" of necessity spent in study, it is a real man's job to compete for first honors with some of our less work-burdened contemporaries. The skeptic must also bear in mind that only in rare and isolated instances does Tech draw upon high school athletic "stars" for her student body. In most cases Tech athletes develop while in attendance at the Institute.


In football C. I. T. was surprised only by Pomona and Occidental, who finished first and second in the order named. In basketball, S. B. U. C. and Redlands finished ahead of C. I. T. The Engineers acknowledged Pomona's, Redlands' and Occidental's supremacy in track. The Engineer racquet swingers were defeated by Pomona only, and this after a hard struggle.

At the present writing, Tech's standing in the baseball and swimming race is undecided, but she will probably finish high in the baseball standing, and should take first place in swimming, as practically all of last year's championship team is trying out.

A most interesting as well as encouraging feature of the past year was the great interest shown in Freshman athletics. The Freshmen have put a team into the field in every major sport, and their teams have been duly successful. The Frosh football team had an excellent line, and a real "punch" in the backfield. It made a name for itself by holding the highly touted Occidental Freshman team to a 7-7 tie. The Freshman basketball team lost a close game to the Occidental frosh by one point, and defeated the S. B. U. C. frosh.

The experience gained by the Freshmen will be of immense help to them in their fight for Varsity berths next year, while the rapidly growing student body will in a few years attain to such size as to make possible the turning out of record-breaking teams. It is hoped that by next year a gymnasium and swimming pool will have been erected on the campus. If the gymnasium is erected, Tech's basket men will make a very strong bid for the Championship.

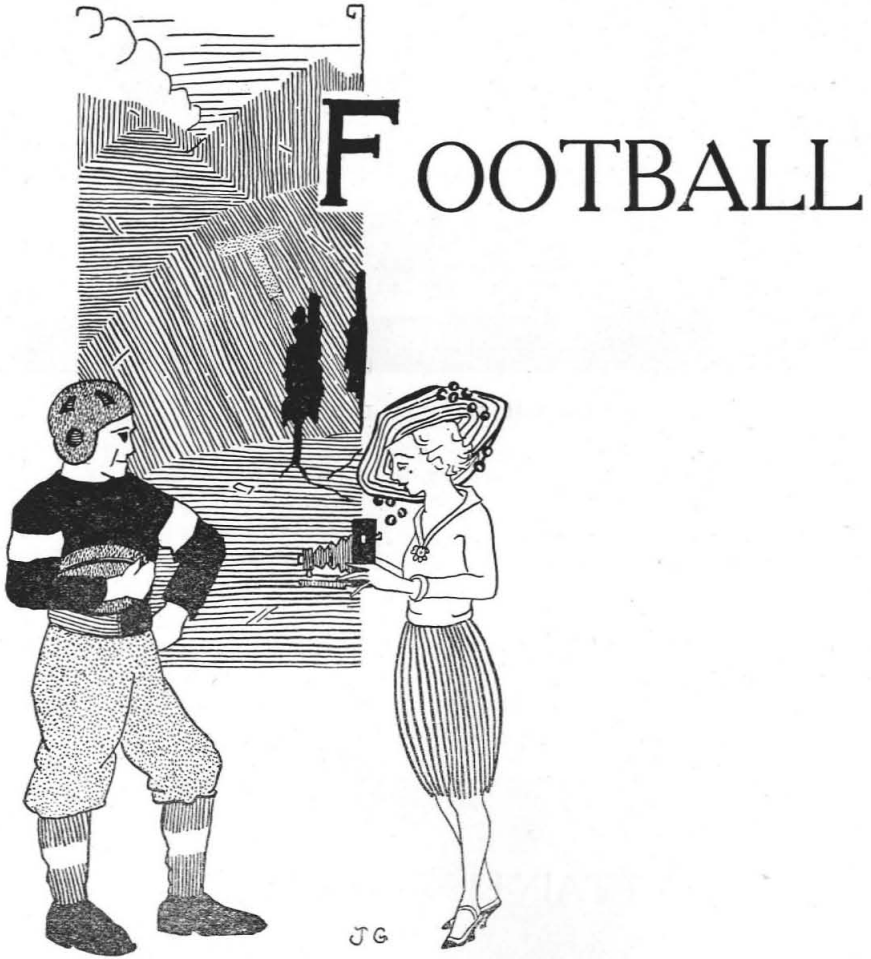
## FOOTBALL FOREWORD

OOTBALL, truly the king of American sports, has always had the proud distinction at Tech of inciting in its behalf more school spirit, pep, and active participation than any other sport, either major or minor. Football is a game that develops in the player all the valuable qualities of physical strength, courage, determination and skill so pre-eminently required by the Engineer, and it is perhaps for this reason that so much interest is displayed in the sport.

When, at the beginning of the college year, Coach Tennison issued his call for football men, the response of the student body was encouraging indeed. More men turned out than there were uniforms for, and until new uniforms could be obtained, most anything had to do. Prospects were decidedly indicative of a successful year, as, representing last year's squad were Capt. Catland, Lavagnino, Stenzil, Hambrook, Webster, Rohloff, Groat, Mullin, Hickey and Rico. Many men who were new to the squad, but who later proved to be very valuable material, turned out to add to the competition for first squad berths. Bugbee, Evans, Catlin, Wilson, Payne and Davis were those who made up the rest of the Varsity squad. Hood, Seares, Arnold, Crissman, Miller, Blakeley and Cox were the second string men who remained out all season and received monograms. In addition a Freshman squad was organized and a regular schedule played.

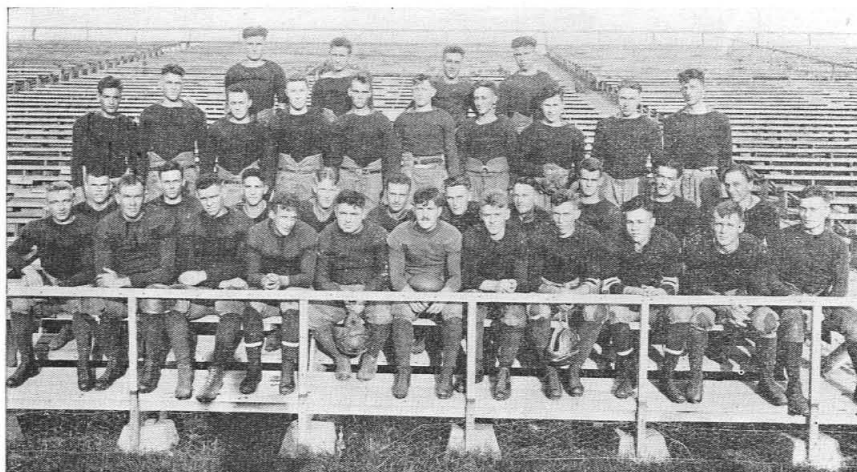
The loss of Hollinger and Klein from the line, while keenly felt, resulted in a better balanced team, both as regards weight of individual players, and their ability. Bugbee and Evans, no pigmies themselves, filled the places left vacant in a very creditable style.

THE 1921 BIG "T"





## THE 1921 BIG "T"



THE 1920 FOOTBALL SQUAD

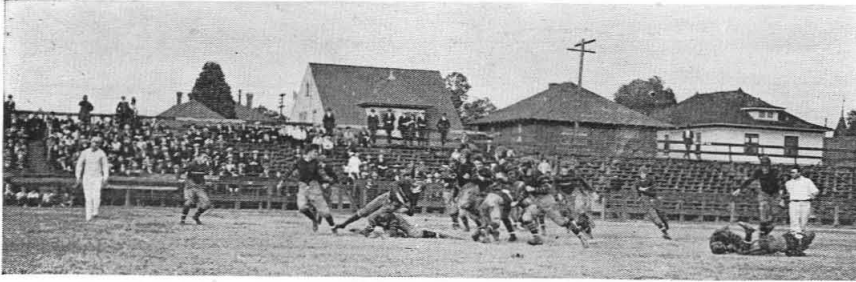
### CAPTAIN CATLAND

Alfred C. Catland, who piloted the 1920-21 football squad and was a tackle thereon, was pre-eminently fitted for this position. He was a football star in his high school days at Santa Ana. He has played three seasons of college football besides having played on service teams. He undoubtedly has more knowledge of football than any other man on the squad.

### CAPTAIN-ELECT GROAT

Edmund T. Groat, who was chosen to lead next year's football team, has had wide experience both on the line and in the backfield. He played end on the 1920-21 squad, and held down this difficult position in creditable style. Groat has two seasons of college football to his credit.

## THE 1921 BIG "T"



THE U. S. C. AFFAIR

### THE GAMES

After a short two weeks of practice, the C. I. T. gridiron squad journeyed over to U. S. C. and met the powerful U. S. C. aggregation in the first game of the season. While the game was an altogether one-sided affair in favor of U. S. C. it was a valuable experience for the Engineers for it afforded invaluable practice, and brought out the weakness and the strength of their organization. The line showed unexpected strength, while the backfield showed the need of training. Mullin caught a forward from Lavagnino late in the game and romped over the line for Tech's only tally. The score, U. S. C. 46, Tech 7, was very good in view of the fact that U. S. C. had one of the best gridiron aggregations on the coast.

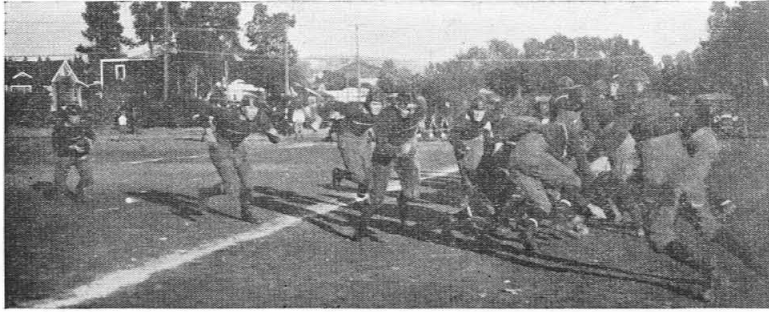


GROAT

BUGBEE

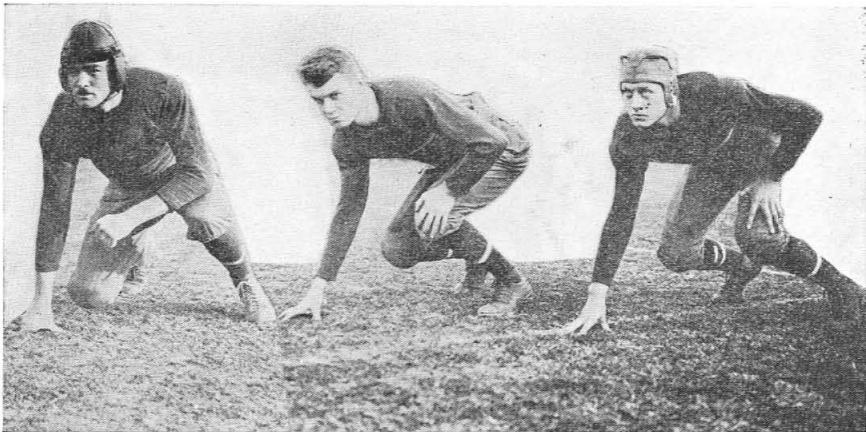
CAPT. CATLAND

## THE 1921 BIG "T"



### INDIAN GAME

The following week, on the Tournament Park turf, the Sherman Indians went down to defeat by the large score of 61-6. Although the Indians played hard and fought every minute, they showed a lack of training and coaching. They had practically no organization, and consequently it was easy for Tech to score. The game afforded some valuable practice, although it resembled very much a track meet. The Indians' lone tally was the result of an intercepted pass which a watchful Indian managed to convert into a touchdown.

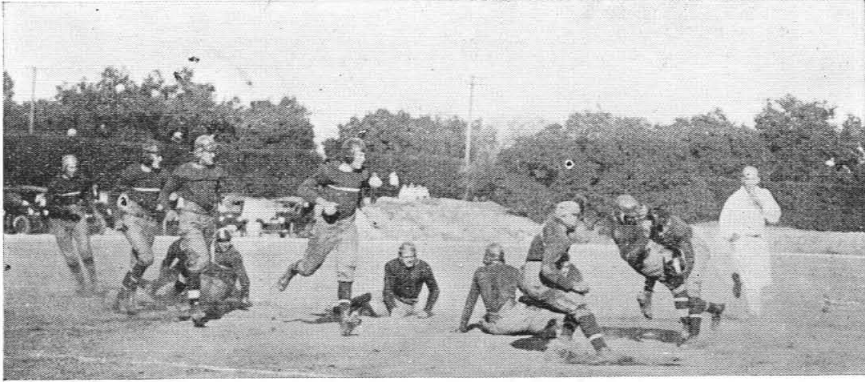


EVANS

DAVIS

PAYNE

## THE 1921 BIG "T"



### POMONA GAME

The first Conference football game was with Pomona College at Claremont. The Tech squad was all primed for the fray, and played very good ball, but it went up against a stone wall when it hit the Sagehen line. The Sagehens, who as it later developed and was at first apparent, had the best football team in the Conference, did not have a great deal of trouble in breaking through the Tech line for four touchdowns in all. Their interference was excellent, and it was evident that they were well trained in the game. The feature of the game from the Tech standpoint was the 80 yard run to touchdown by "Big Boy Rico" in the last quarter with but a few minutes to play. The score came as the result of a blocked place kick. Lavagnino converted.



STENZEL

MULLIN

WILSON

## THE 1921 BIG "T"

### WHITTIER GAME

The "Thundering Thousand" journeyed over to see Whittier mop up the Engineers, but were forced to see the Poets routed by the hardy Engineers. Score, Tech 21, Whittier 7. The Poets showed flashes of brilliancy now and then, but their tricks failed to bewilder the Tech line, which never failed to hold in a case of necessity. "Jitz" Lavagnino contributed very materially to the victory, for by continual kicking the Whittier team was held on its own territory until Tech got a chance to score. The first tally came in the second quarter as the result of a series of neat passes, Groat going over the line. After a series of plunges by Stenzel and Lavagnino, Payne bucked the ball over in the second half for the second tally of the game. The third score came in the fourth quarter after a series of bucks by Stenzel and Lavagnino, Stenzel carrying the ball over.

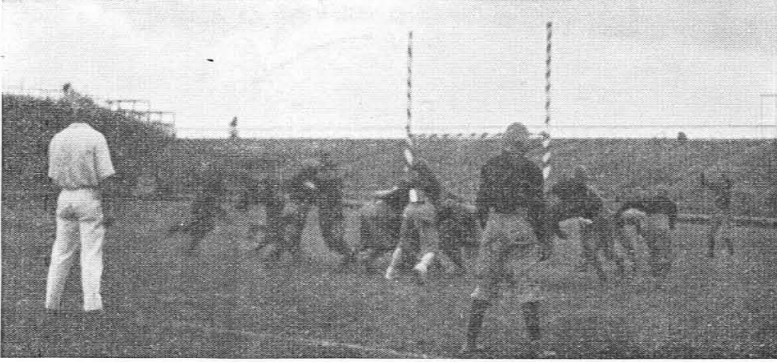


LAVAGNINO

KEMP

HAMBROOK

## THE 1921 BIG "T"



THE BLOCKED PUNT THAT GAVE OXY THE GAME

### OCCIDENTAL GAME

With one defeat and one victory to its credit, the team felt that nothing could stop it when it got to going in the Oxy game, and the rest of the College felt the same way. Occidental had been running into some tough luck in the first of the season, and, as is likely to be the case, her ability was greatly underrated by the Engineers. Nevertheless, Tech probably came as near beating her old rival Oxy in this as she has ever come, as the score—Tech 7, Occidental 12—will show. The game was somewhat spoiled during the first half by an excessive number of penalties, but during the last half more freedom was allowed. The game proved to be one of the closest and most exciting of the whole season.



ROHLOFF

CATLIN

WEBSTER

## THE 1921 BIG "T"

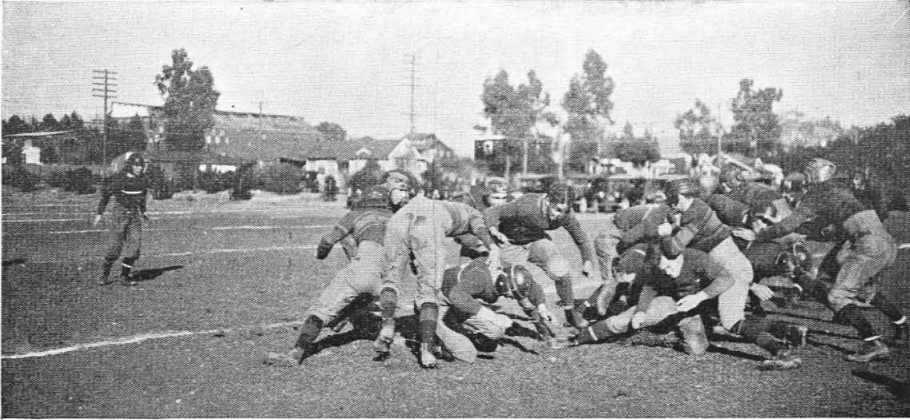


### S. B. U. C. GAME

The Engineers had rather an easy time defeating the Southern Branch of the University of California by the lop-sided score, Tech 32, S. B. U. C. 0. The game was rather lifeless during the first half, which ended 9-0. But during the second half the Engineers got into their stride and succeeded in piling up a 32-0 score before the final whistle. A number of "regulars" were out of the game on account of sickness, which allowed second team members to get out on the field and display their prowess.

Lavagnino was in fine condition. He scored two drop kicks and a touchdown, and converted two of the four touchdowns which were made. He gained on every exchange of punts, and it was in this respect that Tech gained much of her ground. Stenzel, Wilson, and Catlin, playing in the backfield, each made a touchdown. Wilson, although the lightest man on the team, gained ground consistently.

## THE 1921 "BIG T"



### REDLANDS GAME

The Redlands game, last of the games to be played, proved to be the closest, and one of the hardest fought, of them all. Expecting a rather easy victory over the Baptists, the Tech team was surprised by the fight of the Redlands team, and had to work hard to avoid getting beaten 7-0. For three periods of ceaseless, useless line plunging, during which time neither team was able to penetrate the defense of the opposing team, the aerial route was resorted to, and proved to be fruitful for both aggregations. Redlands was first to score—by means of two passes and a thirty yard run. The touchdown had a beneficial effect on the Engineers, who, using the same tactics, ran the ball to the Redlands 3-yard line, assisted by a fumble on Redlands' part. Lavagnino carried it over from here, and, while all the grandstand held its breath, booted the ball over the sticks for the one point which tied the score. Neither team was able to make anything after this, and the game ended shortly after.



## THE 1921 BIG "T"

### THE RESERVES

In addition to the men who received letters for work on the Varsity squad there were eight men who received all the hard knocks which the Varsity had in store for them, worked just as hard as did the Varsity, and fulfilled their task in the same creditable manner. To say that the football team would be worthy of existence without the backing of a strong second squad is unnecessary—it is a fact familiar to everyone. The scrubs contributed very materially to the success of the football team this year.

The second squad was composed of Blakeley, Benioff, Crissman, Hood, Cox, Arnold, Seares and Miller. Hood, Miller, Crissman, Cox and Arnold generally held the line positions, while Seares, Blakeley and Benioff had positions in the backfield.

No games were scheduled with other second squads. Scrimmages with the Varsity and Freshman squads afforded the second string men their only recreation. Most of them got into some of the big games for a brief period, but these rare occasions were something to be cherished by the members of the scrub team. It is for this reason that the more credit should be extended to the men.

What coaching they got was "leavin's," as the bulk of Coach Tennison's time was taken up with the Varsity, while Coach Call spent most of his time on the Freshman team. In spite of this they succeeded in working up a very creditable organization, which gave the two organizations just mentioned some stiff scrimmages.

## THE 1921 BIG "T"

### THE FRESHMAN SQUAD

**S**O many Freshmen turned out at the beginning of the year for football that it was decided to organize a Freshman team. Ray Call put in all his time coaching the Pea-greeners, and turned out a team that was a credit to the Institute. A Freshmen League was authorized by the Conference officials, and Tech, Occidental and S. B. U. C. entered Freshmen teams. It was practically impossible to obtain practice games; so the Frosh obtained practice by acting as door-mats for the Varsity and scrubs and generally held their own against these first string aggregations.

The first league game was with the University of California Southern Branch. The game was played on a wet field, and fumbles were numerous, which certainly had their effect on the final outcome. S. B. U. C. won, 14-0.

The second game was with Occidental and in this game the Frosh more than vindicated themselves. Occidental had defeated the Branch 19-0 and were supposed to have the best Freshman team in the South, so naturally the 7-7 tie which was handed the Occidental Freshmen came as an unexpected surprise.

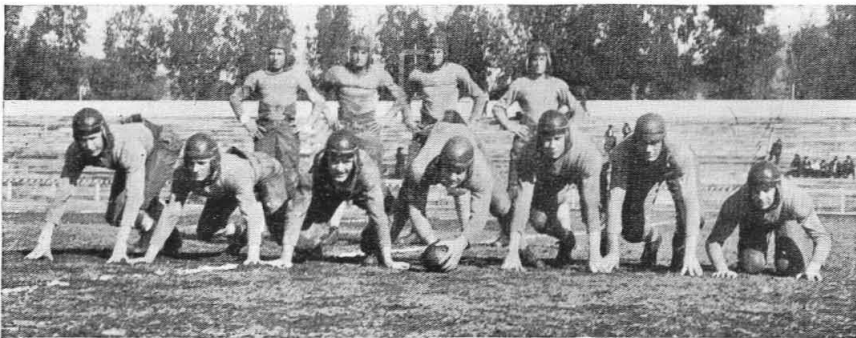
#### LINE

Right End, Studebaker  
Right Tackle, Mortimer  
Right Guard, Pickett  
Left Guard, Springer  
Center, Beck  
Left Tackle, Moyse (C.)  
Left End, Waite, Smith

#### BACKFIELD

Quarter, Settles, Goldsmith  
Halvs, Barton, Dorrestein, Freeman, Beeson  
Full, Sellers

SUBSTITUTES: Hill, Waite Smith,  
Pardee, Stern



THE FROSH SQUAD

## THE 1921 BIG "T"

### BASKETBALL FORWORD



HE California Tech basketball squad, which finished the season in a tie for third place, was admittedly one of the strongest aggregations in the conference. Its passing and team work were almost perfect, but its weakness lay in the fact that the individual members could not shoot the casaba through the hoop with the same unflinching regularity that their opponents did.

With a gymnasium on the campus next year, it will be possible for the men to practice more frequently and thus develop the art of shooting baskets.

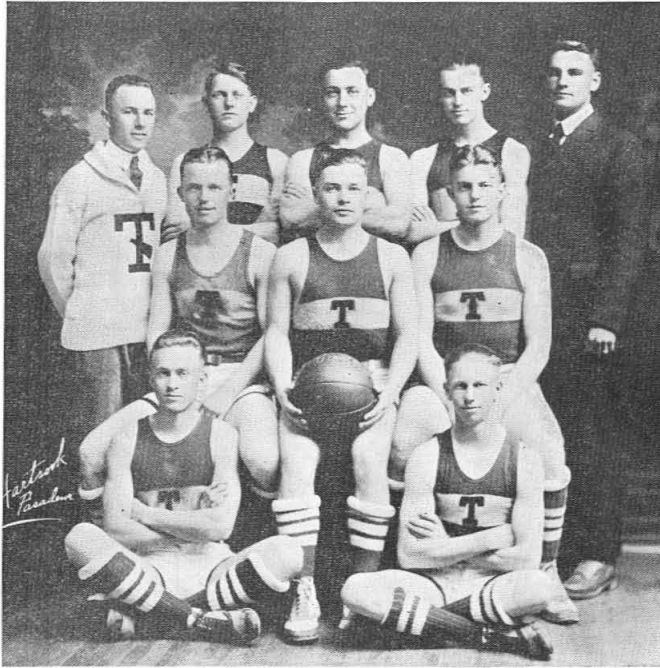
In order to get into shape for the conference games the Caltech basketekers took on some of the best teams in Southern California. Although it did not win all these contests, the team gained some excellent practice and good experience. After meeting such teams as the L. A. A. C.'s speedy quintette, the experienced U. S. C. squad, the La Verne College crew and the hard-hitting Alhambra Elks, the Tech squad was in shape to run into most anything. The Conference schedule of two games each week followed close on the heels of the practice affairs. Two games were played with each of the Conference Colleges—Pomona, Occidental, Whittier, Redlands and the Southern Branch of the University of California.

There were no great changes in the line-up of this year's team and that of last year. Linne Larson at running guard played his usual brilliant game and was easily Tech's most valuable player. Captain Hickey at standing guard was a bulwark of defense. Forwards of the opposing teams generally found it convenient to try for baskets from the middle of the court. Mintie at center played a good consistent game. Timmons and Payne, the usual forwards, both of whom played on last year's freshman squad, played well together. Priddy and Vesper, the two other forwards, did good work. Schneider at guard displayed considerable cleverness. Lavagnino, forward on last year's team, graduated, and Joe Larson stayed out a year to work. Otherwise all lettermen from last year were represented in this year's squad.

Other men on the basketball squad were: Alles, Wilson, Bugbee and Thompson. These men received a monogram. The following freshmen, members of the freshman basketball squad, received numerals: Maltby, Waite, Barton, Smith, Moyse, Garver, Campbell and Pardee.



## THE 1921 BIG "T"



THE 1921 BASKETBALL VARSITY

### CAPTAIN ART HICKEY

Art Hickey, Captain and guard of the 1920-21 Varsity basketball squad, is one fighting fool. Many a score has been kept low because of his fight and skill. Hickey has finished his second successful basketball season. He will be back next year, much to the chagrin of the forwards of opposing teams.

### CAPTAIN-ELECT COLIN TIMMONS

Colin Timmons, captain-elect for 1921-22, has had considerable experience in basketball. He played for Manual Arts during his prep school training, and last year played on the fast Freshman five. As an experienced forward, he proved to be one of Tech's bulwarks of strength during the past season. With all but one of this year's Varsity squad playing the game next year, Timmons should head a successful squad.

## THE 1921 BIG "T"

### California Tech vs. Pomona, January 15

Pomona's Sage Hen aggregation succeeded in defeating the Tech five in a hard-fought contest at the Pasadena "Y." This game—the first conference tilt—was featured by many fouls. The Engineers showed early season form, frequent fumbles and hard luck in shooting baskets being evident. Payne and Timmons at forward, Larson and Hickey at guard, and Mintie at center all put up a fine exhibition. At the end of the first half the score was close, Pomona maintaining a slight lead.

Mackenzie went in at forward in the second half and played a good game. The game was extremely close until the last few minutes of play, when the Sage Hen forwards got loose and brought the score up to a seven point lead. Pomona's shots from the center of the floor were the feature of the contest. Score: Tech 28, Pomona 35.

### California Tech vs. Whittier, January 28

This game was more like a football game or a boxing match than a basketball game, both teams exhibiting considerable love for their opponents. The referee was so busy trying to keep out of the way that he didn't see the multitude of fouls that were constantly being committed. Art Hickey got a fine "shiner" when he collided with one of the 4x4's at the end of the Whittier "barn." The game was featured by the extremely few goals from the floor. Only eight field goals were made by both teams, and of these Tech made five. Timmons and Larson played well for the Engineers, while Pickett and Weaver starred for the Poets. The game ended: Tech 18, Whittier 9.

## THE 1921 BIG "T"

### California Tech vs. Occidental, January 22

The team seemed to have hit its stride in this game with Tech's old rival, each player performing in fine style. Oxy usually furnishes plenty of good competition, so, as usual, this contest wasn't any walk-away. Tech started off with a rush and secured a good lead before Oxy woke up. The half ended with the score 23-12 in favor of Tech. Payne, Timmons and Larson rang up a good many points during the first part of the second frame, but near the close of this period the Tigers seemed to go on the rampage, and succeeded in getting within one basket of tying the score. The gallery went wild. Tech succeeded in gaining a new lead of three baskets, and at the final whistle were in the lead. Schneider playing for Hickey played a good consistent game. Priddy, Vesper and Bugbee got in for a few minutes of play in the last period. Final score: Tech 34, Oxy 28.

### California Tech vs. Redlands, January 26

After a long, cold, uneventful ride and a colder gym, the Tech basketekers couldn't get in form. The casaba wouldn't fit the basket somehow, no matter how carefully it was tossed. The first half was noticeable on account of the very few goals made by both teams. "Father" Dye's eye was on the hog, and none of the Tech outfit could see the basket at all.

In the second half Redlands opened up and seemed to shoot baskets at will. Dye and Troyer, with Lackaye feeding them the ball, made baskets regularly. Larson was closely guarded throughout the game, and so the Tech score was not as large as it might have been. Mintie at center, and Captain Hickey both played consistent, heady games. The last whistle found the score: Tech 19, Redlands 33.

### California Tech vs. S. B. U. C. January 29

Tech met the Southern Branch on the Branch's court and lost a hard-fought game. The score stood nearly even at the close of the first half. Tech couldn't connect with the hoop, although try after try was undertaken. Mintie, Larson, Hickey, Payne and Timmons started the game. In the second half the Cubs started off with a vengeance and established a good lead. Larson went out on personal fouls, incurred during his scrap with the two watchful Cub guards. Schneider took his place. Timmons shot some good baskets in the second strain, but the Cubs' lead was too much. The final verdict was: Tech 18, S. B. U. C. 32.

A dance was given in the gym immediately after the game by the A. I. E. E., co-operating with S. B. U. C., and was dubbed a success by all present.

## THE 1921 BIG "T"

### California Tech vs. Pomona, February 2

The Tech basketekers decisively defeated the Pomona Sage Hens in the second round of the Conference schedule on the Pomona court. The Engineer forwards got loose early in the contest and hung up a good lead. Larson was closely guarded and was unable to shake his man long enough to bring the score up much. Payne and Timmons were working well, Payne ringing up five goals and Timmons six. Hickey and Mintie played consistent defense, the former keeping a watchful eye on Taylor and so keeping the Pomona score down. This young fellow, however, succeeded in getting in some wonderful shots from the center of the floor. The game was hotly contested and the score was very close throughout. Final score: Tech 35, Pomona 31.

### California Tech vs. Whittier, February 5

The Whittier squad turned the tables on the Tech five on the Pasadena "Y" court, defeating the Engineers 28-25. The contest was more of a pole rush than a basketball game. The Poets were in good shape, while the Tech quintette was off form. Larson and Hickey, however, played good consistent ball. The Whittier crew lived up to the reputation the Quaker City has had for the last ten years for turning out good basketball teams.

### California Tech vs. Occidental, February 8

Because of a faulty ruling which prevented mid-week games, Oxy forfeited to Tech.

### California Tech vs. Redlands, February 12

This, the return game with Redlands, was played on the local "Y" court. The game was featured by the shooting of Dye and Troyer for Redlands. The Tech forwards failed to connect with the basket many times during the early period of the game. The absence of Payne, who was out on doctor's orders, was keenly felt in the first half. Timmons and Vesper passed well but couldn't find the basket. The half ended 13-3 in favor of the Redlands outfit.

In the second period Tech started off with a will, Mintie and Larson bringing the score up to 11-19. This spurt lasted until the score stood 17-23 in favor of Redlands. Unluckily the Tech sprint quit here, while Dye succeeded in annexing three more baskets and a foul. At the final whistle the score stood 30-17 in favor of Redlands.



## THE 1921 BIG "T"

### California Tech vs. S. B. U. C., February 19

The Southern Branch succeeded in winning its way to a 27-22 victory over the Tech squad in the final game of the 1921 basketball season. The game was hard-fought, from the beginning whistle until the curtain fell. The first half ended with the Branch maintaining a lead of eight points. In the second frame the Engineers got their eye on the basket and the fight was on. Priddy got a few nasty spills and was replaced by Vesper. Bugbee went in for Mintie. The Cubs rang up some more points and brought the score to 27-22 in their favor. Schneider went in for Vesper and Mintie replaced Bugbee, but the scoring was over and the game ended: Tech 22, S. B. U. C. 27.

### FRESHMEN BASKETBALL



THE peagreen class of '24 put a classy, scrappy quintette into the field this year, which did credit to the freshmen, and lived up to all expectations. After several weeks of practice, during which games were played with several of the high school aggregations, the Frosh were ready to take on anybody who came along. The first game in the Freshman Conference was with Occidental. The game was a fine exhibition of basketball and was close throughout. It was lost by the heart-breaking score of: Oxy 19, Tech 18.

The next game was with the Southern Branch frosh. The S. B. U. C. frosh were considered one of the niftiest aggregations in the South, so it was quite a plume in the Tech Frosh's bonnet when they trimmed their rivals in a preliminary to the main Tech-S. B. U. C. varsity game by the score of 24-20. A return game with the Branch resulted in the score, Tech 26, S. B. U. C. 20. No return game was played with Occidental, as their team had been disbanded.

The men who received numerals for playing on the Frosh team were: Maltby (C.), Waite, Barton, Smith, Moyses, Garver, Campbell, and Pardee.

THE 1921 BIG "T"



# THE 1921 BIG "T"

## THE MEETS



THE track season of 1921 was a successful one in the matter of reviving interest in this sport. With one of the fastest tracks in the South, good equipment, good coaching and a large number of men out, a fairly good team was developed. Although not a championship team, not one of its members graduate, which is favorable for better teams in the future. Men who won their T are: Kemp (C.), Crissman, Clough, Benioff, Reeves, Hastings, Cox and E. Groat.

### Cross Country Run

In a pre-season affair, the cross-country run held at Claremont under the auspices of Pomona College, Tech was represented by Studebaker, '24, who came away with fifth place honors.

### Interclass Meet

The afternoons of February 9 and 10 were featured with the annual interclass meet. As was expected, the Juniors took the meet, but were pressed closely by the Frosh. The final score was: Juniors 45, Freshmen 33, Sophomores 27, and Seniors 12. The Juniors cinched the affair by taking all three places in the shot and hundred. The latter event was won by Crissman in the fast time of 10:1.

### A. A. U. Relay Carnival

On February 19, C. I. T. acted as host to all the track athletes of Southern California in what proved to be one of the most successful relay carnivals ever held in the South. The affair was won by U. S. C. with 25 points. Tech earned two points through Crissman's fourth in the open hundred, won by Paddock in 9:4, and a fourth taken by Crissman, Benioff, Fowler and Clough in the one-mile relay, open.

The feature event of the day was the one-mile eight-man open relay. The event was one by U. S. C. in the exceedingly fast time of 3 m. 6 sec., a new world's record.

## THE 1921 BIG "T"



THE 1921 TRACK VARSITY  
Cox Benioff Kemp Crissman Hastings Clough Groat Tenison

### Pomona vs. C. I. T. and S. B. U. C.

The meet with Pomona was a three-cornered affair, with Tech and Southern Branch of U. C. combined against the Sagehens, who, nevertheless, had everything their own way in a majority of the events and won by a score of 98-33. Of the 33 points, Tech made 17 and S. B. U. C. 16.

Crissman was the star for Tech, winning two firsts, one in the hundred in 10:2, and another in the two-twenty in the very good time of 22:1. The four-forty was a fight all the way around, with Pomona finally taking the first two places and Clough of Tech taking third.

In the field events Pomona was particularly strong, and it was here that she won the meet. Jack Cox, however, surprised everybody by clearing 10 ft. 6 in. in the polt valut, which took second place. Jim Bugbee tied for second in the high jump, the winning height being 6 ft. 9 in. The relay was a nip and tuck affair between Tech and Pomona, the Engineers taking the lead in the first two laps only to lose out to Pomona at the end. The time was 3 m. 34 3/5 sec.

## THE 1921 BIG "T"

### S. B. U. C. vs. C. I. T.

The next meet held was the dual affair with the Southern Branch of U. C. on Tech's home grounds. This meet was held in place of the triangular meet with Redlands which scheduled Tech and S. B. U. C. to combine against Redlands. It proved to be a close and exciting meet, the relay and shot finally giving the large end of a 73 5/6-57 1/6 score to Tech.

Ed Groat was high point man with a total of sixteen, gained by a first in the discus and high hurdles and second in the shot and hammer. Crissman won the hundred in 10 flat, thereby establishing a new C. I. T. record. He also won the two-twenty in 23:4. Kemp took third in both these events.

Reeves won two firsts in the hammer and shot.

The four-forty was all Tech's, with Clough and Benioff coming in first and second respectively in the creditable time of 52:4. Stenzil, of football fame, came out and took third in the mile, as did Stromsøe in the 880. The relay team, composed of Benioff, Seares, Stromsøe and Clough, cinched the meet by winning in easy fashion. Other points in the track events were two seconds in the hurdles by Hastings and a third in the low hurdles by Benioff.

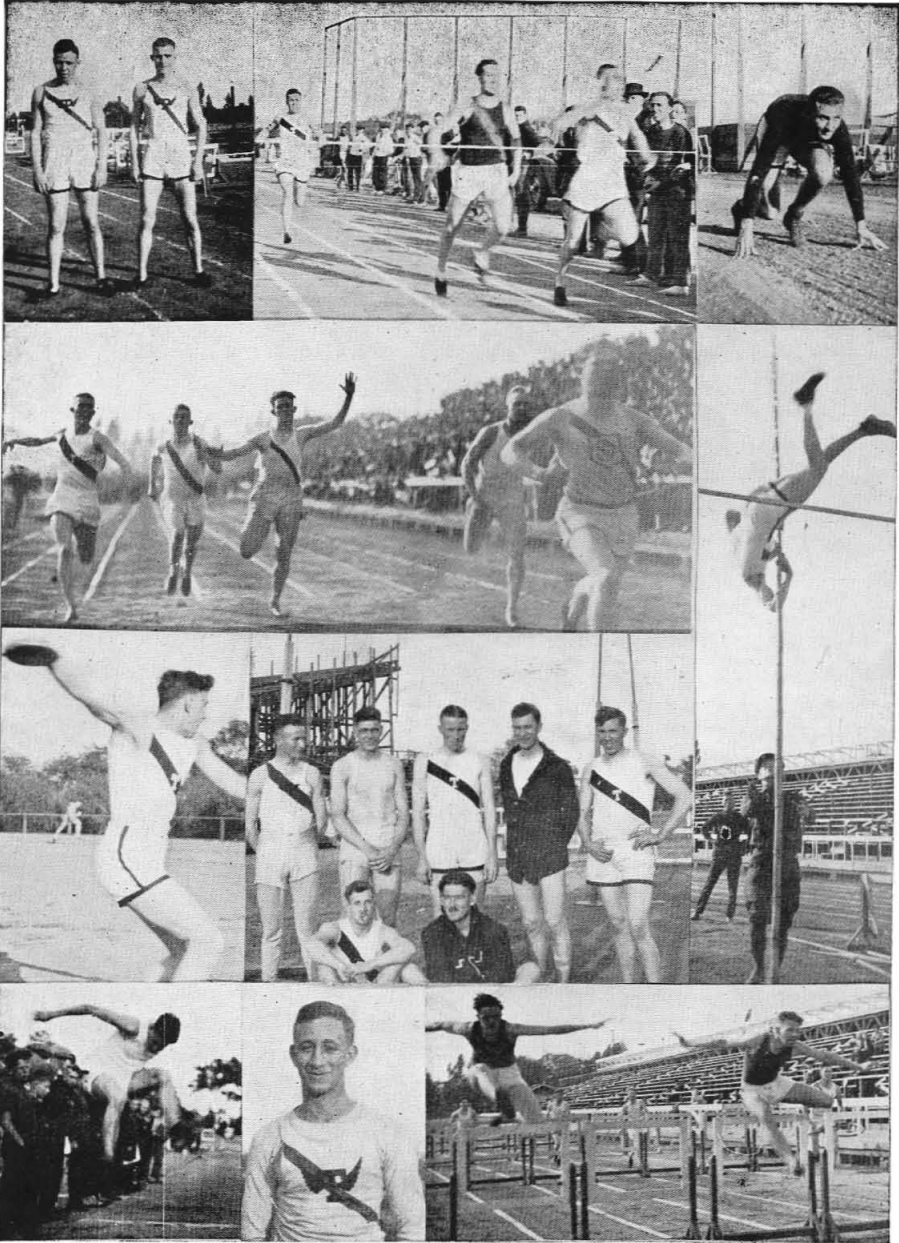
In the field events Cox's first in the pole vault came in handy. Hastings and Mackenzie took second and third respectively in the broad jump. Seares and Evans tied for second in the high jump and Morrison tied for third in the pole vault.

### CONFERENCE MEET

The meet with Occidental had to be called off on account of rain, so that the next meet in which the track team was seen in action was the big affair of the year, the Annual Conference Meet. The meet was held on Paddock field, and was one of the best and fastest Conference meets ever staged. Although Pomona won in comparatively easy fashion, there was hardly an event in which the competition was not keen, and in which the winner had an easy time winning.

California Tech, with twelve points, had to be satisfied with fourth place. Crissman was off form and failed to cop the sprints. Nevertheless he and Kemp tied for second in the hundred and so gained 4 points. Criss also took second in the two-twenty. Surprising everyone, and running one of the prettiest races of the day, Benioff came in second in the four-forty, not more than four yards behind Kilby of Redlands, who won in 50 2/5. Another tally was counted for Tech when Reeves took third place in the hammer throw. The relay developed into a fight for second place between Pomona and Tech. Pomona's fourth man, coming up from behind, beat Benioff to the tape by a matter of inches. Tech's team was made up of Seares, Stromsøe, Clough and Benioff.

# THE 1921 BIG "T"



## THE 1921 BIG "T"

### A. A. U. Field and Track Meet

At the annual A. A. U. Field and Track Meet, held at Redlands April 23, Benioff and Studebaker kept Tech on the athletic map by winning second in the four-forty and third in the two mile respectively. Except for the four world's records broken by Paddock of U. S. C.—the 220 yd. dash, and 100, 200, and 300 meter dashes—exceptional time was not made in any of the events.

### Captain "Geoff" Kemp

"Geoff" Kemp, Captain of this year's track squad, is a valuable man in the sprints. He specializes in the sprints, but he can also heave the shot. Kemp has been bothered by a weak ankle, and so has not shown up to his best ability in the track line. Kemp has won his T in track for the third consecutive year, and will have a chance to win another next year.

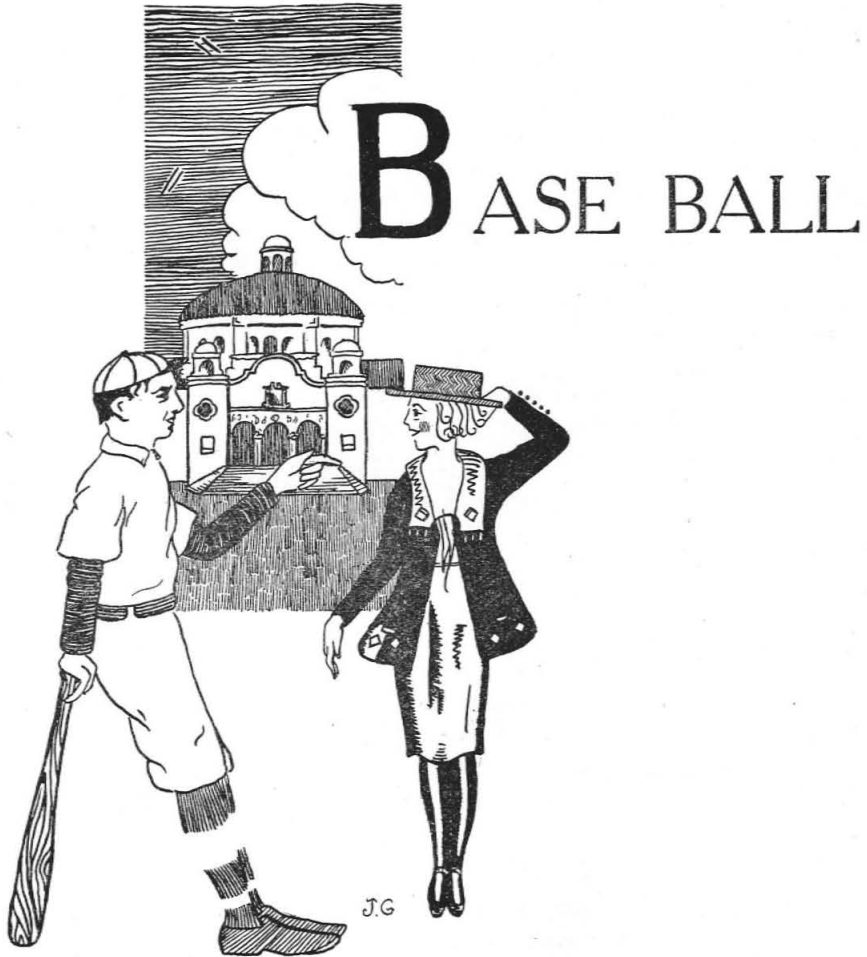
### Captain-Elect "Ben" Benioff

"Ben" Benioff's development as a track man has come as a distinct surprise to his many friends. Before this season, Benioff had never felt a track spike underneath his flying feet, although he is a Junior at the Institute. From the very first he showed promise of developing as a 440 man, but that he would show the speed he has shown on the cinder path was never dreamed. Benioff has all the qualifications for track captain, and should head a successful squad next year.

## FRESHMAN TRACK TEAM

**F**OR the first time in its history California Tech was represented by a Freshman team in track and field sports. The team turned out by the class of '24 was a "high-powered" one and promises good material for the Varsity next year. Although only two meets were held, one with S. B. U. C. Freshmen and one with Pasadena High School, and both these were lost by small scores, the season was a success in keeping alive the spirit and pep that characterized the class of '24. The team was captained by Studebaker. Men who won their numerals for their endeavors were: Studebaker and Squires, distances; Lownes, sprints; Pine, hurdles; Carrier, Diddel, F. Groat and Kraeger, field events.

THE 1921 BIG "T"





## THE 1921 BIG "T"

### BASEBALL FORWARD

**H**ITTING like wild men, and winning both the Oxy and Branch games by lop-sided scores, the baseball team seemed headed straight down the stretch for the Championship, but starting with the Whittier crab-fest the team fell into a slump which they are at the material facilities, of money, of courage to go ahead, or the feeling that these present time making a desperate attempt to climb out of.

In the first two games of the season Tech made 25 hits and scored 12 runs to their opponents' 11 hits and 6 runs, while in the next four conference games Tech garnered only 19 hits while the opposing teams were knocking out 37 safe bingles. However the team lost its jinx in the second Branch game when it pulled out of almost certain defeat by scoring eight runs in one inning.

This year's squad was composed of seven men from last year's squad and six new men. Potts was elected captain, and has played a wonderful game in the outfield, making some wonderful catches and cutting off practically certain tallies at the plate with his cannon ball peg.

Both Reynolds and Groat were veteran chuckers, and both pitched a fine brand of ball. Reynolds is also a batter of no mean ability, standing third on the batting list. Groat hits the ball less often, but when he connects it is generally for extra bases. Mintie has also been on the pitching staff this year, and has showed up well.

Kemp, Schneider and Larson of last year's varsity and Priddy and Alcock of the '23 Freshman team have held down the infield positions this year. Kemp and Priddy have both played at short, and are the heaviest batters on the team. Kemp is also the fastest man on the team, and easily leads in the number of stolen bases. Larson started at second, and moved to third when Priddy went into the outfield. Linne is a good fielder and gets his peg to first in great style, but is rather weak with the bat. Alcock plays a good game at second, and bats around .300.

Davis and Macdonald are old timers although they were not at Tech last year. Both play in the outfield and creditably. Davis has the edge in hitting, making about every third one safe. Macdonald acts also as auxiliary catcher.

Weitekamp takes 'em behind the bat, and is one of the finds of the season. He is a new-comer to the squad, but has turned out to be a great backstop. His only weakness is in hitting the ball, otherwise he is indispensable.

## THE 1921 BIG "T"



THE 1921 BASEBALL SQUAD

### THE OCCIDENTAL GAME

Tech nabbed the opening game from Oxy by a 9-3 score. Ten nicely bunched hits gave the Engineers their nine tallies, while seven scattered hits brought the Tigers only three runs. The Oxy team was sadly weakened by the loss of "Bosco" Alcock, the Oxy hurling wonder, and showed the results of his loss in its playing. Practically every Tech runner that reached first stole second.

The first two Tech batters got safe on errors, and scored on Reynolds' long single to right field. Oxy then got three free bases and a hit which netted her one run.

Tech got another run in the second with the aid of a walk and a hit, and then both teams tightened up until the fifth frame, when the Engineers scored three more. The Engineers got another run in the sixth and two in the eighth, and Oxy had nearly given up hope when the break came her way. The first two batters got safe on errors and scored on more errors before the third batter had reached the plate. Hurr then got a clean single and the next batter hit a long fly to center. Potts grabbed the fly and then threw Hurr out at home, which put an end to Oxy's rally. Tech wound up the game with three more hits and two runs.

	<i>Inning</i> —1	2	3	4	5	6	7	8	9	<i>Total</i>
C. I. T.....	2	1	0	0	1	2	1	0	2—	9
Oxy .....	1	0	0	0	0	0	0	2	0—	3

## THE 1921 BIG "T"

### California Tect vs. S. B. U. C., April 13, 1921

Not satisfied with the drubbing they gave Oxy in the first game, the hardy Engineers traveled over to the Southern Branch of the University of California and took the Cubs down to the tune of 12-3. The game was called at the end of the seventh. By that time the Cubs had used three pitchers and were hunting wildly for another.

Priddy started the track meet in the first inning with a clean single. Kemp then knocked one over the fence, scoring Priddy. Kemp scored from second on the batter's grounder to the infield, and the inning ended Tech 2, S. B. U. C. 0.

Tech scored again in the third when Kemp singled, and stole second and third. The next three batters hit, scoring three runs. In the fourth Tech got two more, and the Cubs woke up long enough to get two tallies in this frame. Three in the fifth and two in the sixth brought the Engineers' score up to twelve.

The Cubs got a run in the seventh, but they decided to call it a day, and the game was ended. The Cubs' big weakness was the lack of a first rate pitcher, for when they got a chance to field the ball, they handled it well.

	Inning—1	2	3	4	5	6	7	Total
C. I. T.....	2	0	3	2	3	2	0	12
S. B. U. C.....	0	0	0	2	0	0	1	3

### California Tech vs. Whittier, April 30, 1921

The Whittier game was a farce from start to finish. When the first half of the fourth inning had passed, the Whittier team had the long end of a 7-0 score. In the last half of the fourth inning Tech was at bat. The first batter was out, shortstop to first. Davis then singled and reached second when Macdonald walked. Potts came up and knocked a high fly to short center which the second baseman attempted to cover but muffed. This filled the bases, but the Whittier coach, evidently expecting to lose the game despite his long lead, claimed that the fly which Potts knocked was an infield fly and that the batter should be out whether the ball was caught or not. The umpire refused to reverse his decision, and the Whittier coach insisted that the game be protested. The protest was announced to the bleachers, and the game was played from then on by the Tech team as purely an exhibition game, which would not affect Tech's standing in the Conference.

The game ended with Whittier 17, Tech 9. Perry of Whittier then decided he would like to withdraw his protest but Coach Call insisted that the game was protested, and being protested should be played over. After a long period a decision in the matter was finally reached by Conference officials, who announced that the game would stand as played.

## THE 1921 BIG "T"

### California Tech vs. Pomona, April 23, 1921

Despite the fact that the Pomona game was played in a light rain it was one of the best games of the season. The final score gave Pomona 4 and Tech 3. Both pitchers were working exceptionally well. Groat allowed four hits and Taylor of Pomona gave three safe hits.

Pomona got her first three runs with three singles and a walk in the second inning. Tech put over two runs in the third and tied the score with one in the fifth.

Both teams played shut-out ball until the last of the eighth inning when Tech got two men on bases but failed to bring them home. A walk and an overthrow to first together with a sacrifice and a squeeze play brought home the winning run for the Sagehens in the ninth inning.

The band turned out to the game in full force and enlivened the crowd with choice bits of jazz.

	Inning—	1	2	3	4	5	6	7	8	9	Total
C. I. T.....	0	0	2	0	1	0	0	0	0	0	— 3
Pomona .....	0	3	0	0	0	0	0	0	0	1	— 4

### California Tech vs. Redlands, April 30, 1921

The Redlands team glued their eyes to the ball and kept them there until they had made 13 safe bingles and 11 runs. In the meantime Tech had secured 5 hits, but no man had reached home, and the game ended with Redlands 11, Tech 0.

Although Redlands ran up a long score the Tech team made only three errors. The game was won and lost on hitting, which by this time was the last thing that the Engineers could do. Redlands started scoring in the first frame, in which she made three runs, and kept it up steadily throughout the game. In the second, Cummings rapped out a double which scored a run. A walk and a single in the third netted another run, and so on until in the fifth inning the Redlands team ran up five runs before it could be stopped.

Reynolds was the only Tech player to hit consistently. In his two times at bat Maynard rapped out two clean singles.

The Redlands game ended the first round, of which Tech won two and lost three.

	Inning—	1	2	3	4	5	6	7	8	9	Total
C. I. T.....	0	0	0	0	0	0	0	0	0	0	— 0
Redlands .....	3	1	1	0	5	1	0	0	0	0	— 11

## THE 1921 BIG "T"

### California Tech vs Occidental, May 7, 1921

In the second Occidental game, the Tigers turned the tables on Tech and won, 2-0. Hitch pitched for Oxy, and evened his score with the Tech batters, who made eleven safe hits against him in the first game, by allowing only one hit. The game was unique in that only one error was made, and that one was made by a Tiger player.

No one reached first until Davis got hit in the second inning and was given his base. He was forced out at second, and no one else reached the initial sack until the eighth. Roberts of Oxy whanged out a double in the third, reached third, but failed to score.

The game continued airtight until the Tigers got three hits in the eighth inning and scored two runs. In the last half of the eighth Larson drew a walk and went to second when the second baseman muffed Priddy's fast grounder. The runners then got away with a pretty double steal, but with a man on second and third and only one out, Tech failed to score.

	<i>Inning</i> —1	2	3	4	5	6	7	8	9	<i>Total</i>
C. I. T.....	0	0	0	0	0	0	0	0	0—	0
Oxy .....	0	0	0	0	0	0	0	2	0—	2

### California Tech vs. S. B. U. C., May 11, 1921

Bringing the score from 10-2 in favor of the Southern Branch of the University of California up to 13-11 in favor of Tech, the Engineers won the most spectacular swat fest of the season from the Cubs in the return game with the Branch on the home grounds. The Cubs made three runs in the first frame and Tech came back with two tallies.

In the second the Cubs scored two runs and succeeded in loading the bases, when Reynolds was sent in to relieve Groat on the mound. Olmstead was the first man up against Reynolds. He clouted the ball for a home run which scored four runs. Reynolds fanned the next man and the side was retired.

Tech failed to score in the second, while the Cubs brought home another runner in the third. With one man on base, Kemp put the wood to a fast one, adding two runs to Tech's score. Three outs in quick succession retired the Cubs and brought Tech to bat again. In this one inning Tech made eight runs which gave the Engineers a two run lead over the Cubs. During the inning Priddy made two singles, Reynolds got a double and Groat hammered out a three bagger.

Both teams added another run to the score, which brought it to 13-11 in favor of Tech. The Engineers made 19 safe hits and three errors while the Cubs were making 7 hits and 6 errors.

	<i>Inning</i> —1	2	3	4	5	6	7	8	9	<i>Total</i>
C. I. T.....	2	0	2	8	0	0	1	0	0—	13
S. B. U. C.....	3	6	1	0	1	0	0	0	0—	11

## THE 1921 BIG "T"

### California Tech vs. Whittier, May 14, 1921

Whittier held the rabbit's foot in the return game at Whittier, winning by the score of 9-4. Tech made 11 hits to the opponents' 9, but seemed unable to bring the runners home.

Whittier scored first in the second inning, making two runs with the aid of two hits and an error. Priddy got his second hit of the game in the third inning with a two bagger. Alcock sacrificed him around to third. He scored in the next minute when Schneider got a clean single. The side was retired without scoring again.

Whittier got four runs in the fifth and three in the sixth inning. Tech managed to put over two in the eighth and one in the ninth. The final score was 9-4.

Groat pitched the game for Tech and struck out eleven men. The team made only two errors, but the breaks came all for Whittier—hence the final score.

	<i>Inning</i> —1	2	3	4	5	6	7	8	9	<i>Total</i>
C. I. T.....	0	0	1	0	0	0	0	2	1—	4
Whittier .....	0	2	0	0	4	3	0	0	0—	9

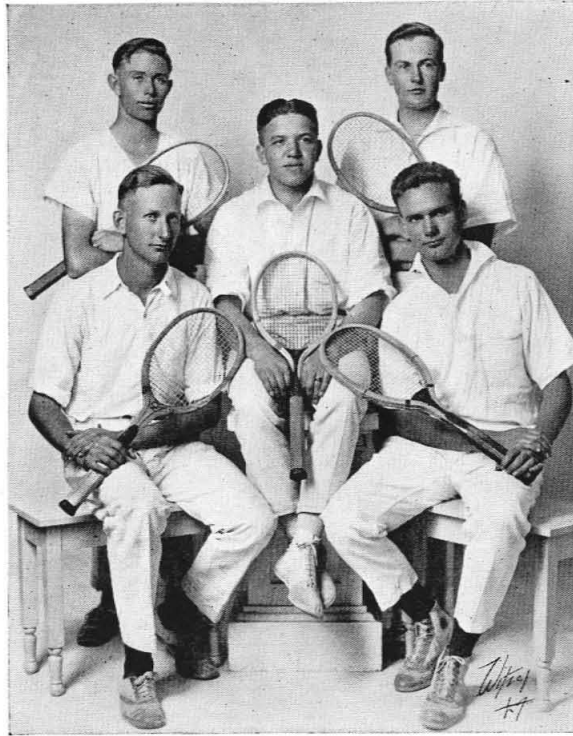
## THE 1921 BIG "T"

The Tennis Team  
Lost only to  
Pomona  
The Swimming Team  
Won the Conference  
Cup and still  
We call them  
Minor Sports.





## THE 1921 BIG "T"



### TENNIS

The past season has been the most successful in the annals of tennis history at Tech. The team has gone through the entire season with but one defeat, and that by a 4-3 score. This one defeat lost the Conference championship to Pomona, but can hardly detract from the wonderful showing that has been made.

The college had the good fortune to have within its student body five first class players. Kohtz, Shugart, Lynn, Honsaker and Clarke are all players of no mean ability and together have made up one of the strongest teams of the South.

Shugart and Kohtz went to the tournament at Ojai, and although they did not take first honors, they gave the northerners some stiff competition and covered themselves with glory in defeat as well as in victory.

Besides the regular Conference and practice matches which the team took part in during the year, the men took on and defeated U. S. C.'s crack team and the S. B. U. C. freshman team, which was considered above average. After winning a comparatively close match with U. S. C. at home, the team

## THE 1921 BIG "T"



### SWIMMING

Two successive swimming championships is the enviable record which Tech's swimming team has made in the past two years. The 1921 Conference title went to the Engineers with a count of 46 against 37 for Oxy who had the next high score. Redlands followed with 15 points and Pomona finished the list with 6 tallies. The feature of the meet was the plunge for distance in which Tech's three entrants took the first three places. In this event Harris upset the dope by nosing out Herberger for first place. Klein finished a close third. Myers was high point man for the Engineers, taking first in the 50 and 440 yard swims.

Teaching Fellow Ries, who was a letter man in all the aquatic sports at the University of Chicago, was the man who so ably coached the team. The team was successfully managed by Herberger, who combined business with his participation in the watery sport.

The letter men from the season of 1920 were Starr, Herberger, Myers and Lummis. Harries, Howard, Evans, Champion and Klein were the new members of the squad.

The past season was altogether as successful as possible, and as very few of the team are leaving Tech this year, another championship team should be looked for next year.

## THE 1921 BIG "T"

### 1920-21 LETTER MEN

**ALCOCK**—"Joe," brother of Occidental's famous "Bosco," has gained recognition on his own merit, and not merely as a brother of "Bosco." Playing equally well at second base and in the field, he has been one of the mainstays of the baseball team.

**BENIOFF**—"Ben" has in one brief year developed into a marvellous 440 man. He also played on the scrub football squad. He is next year's track captain-elect.

**BUGBEE**—"Jim" was a crackerjack lineman, who messed up more than one of the opposing guards. Jim is also a bit of a high jumper, although he did not win a track letter. He was accorded a berth on the all-conference honorary football squad.

**CATLAND**—"Cat" has "gone in" for football more extensively than any other man in the Institute. With three seasons of college ball to his credit, membership on several service teams, and the captaincy of the past year's gridiron squad, he can safely rest on his laurels.

**CATLIN**—"Pussy" was a back-field man of the first calibre. This was his first and last year on the squad, as he is a member of the present graduating class.

**CLARK**—"Phil" has successfully completed his third successive year as a member of the tennis team. His steadiness and accuracy are his greatest assets.

**CLOUGH**—"Frank," as a four-forty man, is a mainstay of the C. I. T. track squad. He makes the circuit in the creditable time of 51 2/5 secs., and runs a lap in the relay.

**CHAMPION**—"Ed," in the relay and distance, contributed very materially to the success of the swimming team.

## THE 1921 BIG "T"

COX—"Jack" surprised every one by vaulting over the bar at a height of 10 ft. 6 in. This is Jack's specialty, and, like all specialists, he should improve with time. He has two years yet in which to demonstrate his ability.

CRISSMAN—"Criss" has developed into a remarkably fast sprinter since his initial appearance last year. He has done the 100 in 10 flat, and the 220 in 22 secs. Nothing but tough luck prevented his winning first in both these events in the Conference meet.

DAVIS—"Whit" played a very creditable game at end, and won another letter in baseball, his accurate fielding being a feature of the play. His motto is "actions speak louder than words."

EVANS—"Bernie" is another two-letter man. There were not many in the Conference who were better than he at guard, while his consistent work both in sprints, distances, and diving, won for him a letter in swimming. Evans also tackled the high jump, but did not gain sufficient points to merit a letter.

GROAT—"Nanny" has the distinction of being Tech's most versatile athlete. He won letters in football, playing end; track, in the field events; and finally in baseball, in which sport he has made a name for himself for three seasons as a pitcher of the first calibre. He is next year's football captain-elect.

HAMBROOK—"Dick," besides filling very capably the difficult position of Student Body President, undertook to hold down the center berth on Tech's eleven. As a stone-wall center, who was always on his feet playing the game, he had few equals.

HARRIES—"Dave" surprised everyone by winning first in the plunge for distance in the Conference meet with a powerful lunge of over 50 feet.

HASTINGS—"Hasty" specialized in the broad jump. He could also run the hurdles whenever occasion demanded. He was good for 21 feet in the broad.

## THE 1921 BIG "T"

HERBERGER—"Art" was a big point winner for Tech in the plunge for distance. He also tried his luck in the breast stroke.

HICKEY—"Art" was basketball captain, and one of the mainstays of the team. He played a brilliant game at standing guard. Unfortunately for Tech, he was unable to compete in swimming. A bad shoulder prevented his participation in football.

HONSAKER—"Johnny" is a tall gent, which may or may not account for the fact that he is a good tennis player. He has a service that generally wins for him.

HOWARD—"Chuck" won his letter in swimming by taking fourth in the Conference meet in both the 50 yd. dash and the 440 yd. dash.

KEMP—"Geoff" won letters in track and baseball. A sprained ankle kept him out of football. He was track captain. Geoff starred with the willow wand, and was a very consistent fielder.

KLEIN—"Maj" took third place in the plunge for distance in the conference meet and so won a letter and a medal.

KOHTZ—"Rusty" is a short man, which does not prevent him playing an excellent brand of tennis. At Ojai he put up a stiff battle, but was eliminated by Neer of Stanford in the first round.

LARSON—"Linne" is Tech's best bet in basketball. A star in his high days, he played for the L. A. A. C., and has just completed his third successive year for Tech. Although he plays running guard, he scores by far the greatest number of points. He also won a letter in baseball.

## THE 1921 BIG "T"

LAVAGNINO—"Jitz," the man with the educated toe, is in a class by himself.

He has played football four years for Tech, and has consequently achieved a feat which is likely never to be repeated. Graduation prevented his participation in basketball.

LUMMIS—"Pud" is a valuable man in the back-stroke, and besides placing consistently in this event, he swims a lap in the relay. He has another year in which to show his talent.

LYNN—"Skinny" is a new acquisition on the tennis team this year, but has been showing rare form in all the matches played so far. Only a sophomore, he is a future team captain.

MACDONALD—"Mac" is a little fellow, but little fellows have no disadvantage in baseball. Mac's real position is catcher, but a weak arm forced him into a field position, which he filled very capably.

MINTIE—"Ernie" jumped center in most of the basketball games, and did it very well. He has developed remarkably since he came out for the first time last year.

MULLIN—"Brick" is possessed of a beautiful mop of sorrel hair—and a talent for football. He has played in both line and backfield positions, and plays each equally well.

MYERS—"Tommie" is Tech's representative in the breast stroke, and in the distances. He amassed more points in meets than did any other man.

PARMALEE—"Parm" has played his last year of baseball for Tech. He was a valuable man in the outfield.

## THE 1921 BIG "T"

PAYNE—"Leonard" starred in the backfield. He was fast and sure, and went where he wanted to go with a force that overcame all obstacles. His sureness and endurance stood him in good stead also in basketball, in the position of forward.

POTTS—"Cliff" was a boon to the baseball squad this year. When Moir, who was elected captain last year, did not return, Potts was accorded the honor. He is an experienced man, and well fitted for the position he occupied.

PRIDDY—"Russ's" accuracy in find the basket was a feature of his basketball playing. His accurate fielding was one of Tech's biggest assets in baseball, in which sport he played shortstop.

REEVES—"Hubie" is a big fellow and has had considerable experience in his events, so he proved an invaluable asset to the track squad. His events were the shot and hammer throw.

REYNOLDS—"Maynard" has pitched his last game of ball for Tech, and in his long record of performance has nothing to be ashamed of. His coolness and steadiness pulled him out of many a tight hole, while his "twisters" kept the batters of the opposing team constantly guessing.

RICO—"Big Boy" made himself famous in the Pomona game, when he blocked a place kick and ran 80 yards to a touchdown. Unfortunately he developed a case of blood poisoning which caused him to lose the better part of the school year. His many friends hope he will be able to resume his studies again next year.

ROHLOFF—"Ski" plays tackle and does it in an exceedingly convincing manner. His excellent work has been for two years a feature of the Tech line, as evinced by the evident admiration of co-eds in the grand stand. He hopes to repeat next year.

SCHNEIDER—"Cupid" is the cute-looking gentleman who holds down first base out there on the baseball diamond. He snags 'em all—high, low or grounders, and has an enviable list of put-outs to his credit. He can play guard in a game of basketball equally well.

## THE 1921 BIG "T"

SHUGART—"Don" is of the white-panted gentry who populate the tennis courts at all hours of the day. He assisted in putting Tech second in tennis, and acquitted himself with much credit at Ojai.

STARR—"Ted" was no inconsiderable factor in the winning of the swimming championship. He was captain of the swimming team which for the second time won the title. The sprints and breast-stroke were his events.

STENZEL—"Dick," known as "The Flying Dutchman," gained his letter title by the determined manner in which he repeatedly plunged through opposing lines for large gains. If Dick was given the ball, it was certain that a gain would be made.

TIMMONS—"Colin" played a stellar game at forward. He is an experienced basketball player, gaining his experience on a crack high school squad. He is next year's basketball captain.

VESPER—"Howard" played a good game at forward. His consistency was his main asset.

WEBSTER—"Glen" played an excellent game at end. This is the first year he has won a letter, but he has a good chance of repeating.

WEITECAMP—"Weity" stepped into the place left vacant by the varsity catcher of last year, and while filling it very capably at the start, showed steady improvement clear to the end of the season.

WILSON—"Fanny" was the demon of the Tech backfield. Weighing but 145 pounds, he was so agile and fast that time after time he broke through the line or around end for large gains. He has another year.



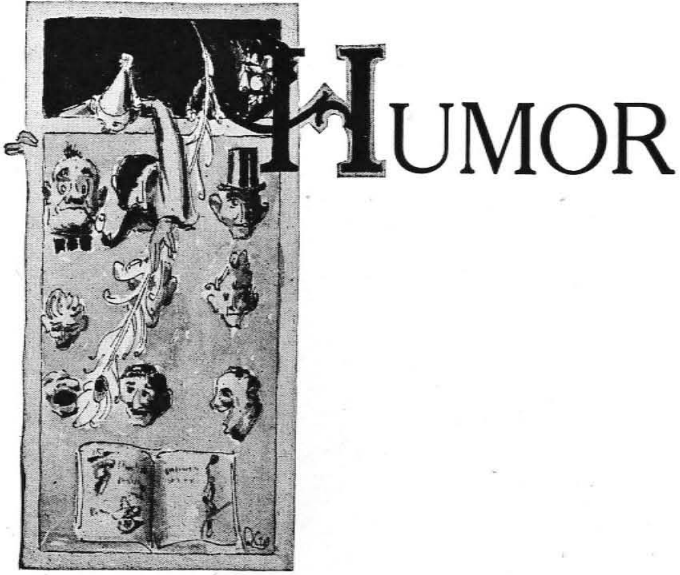
THE 1921 BIG "T"

LEST WE FORGET

—

The Raspberry is a  
Queer little fruit  
More often than  
Not  
It is best when  
Taken with  
A grain of salt.

THE 1921 BIG "T"



BOOK VI

Robert Gillies  
Editor

Page One Hundred  
Eighty-seven

THE 1921 BIG "T"

WORTH LOOKING INTO

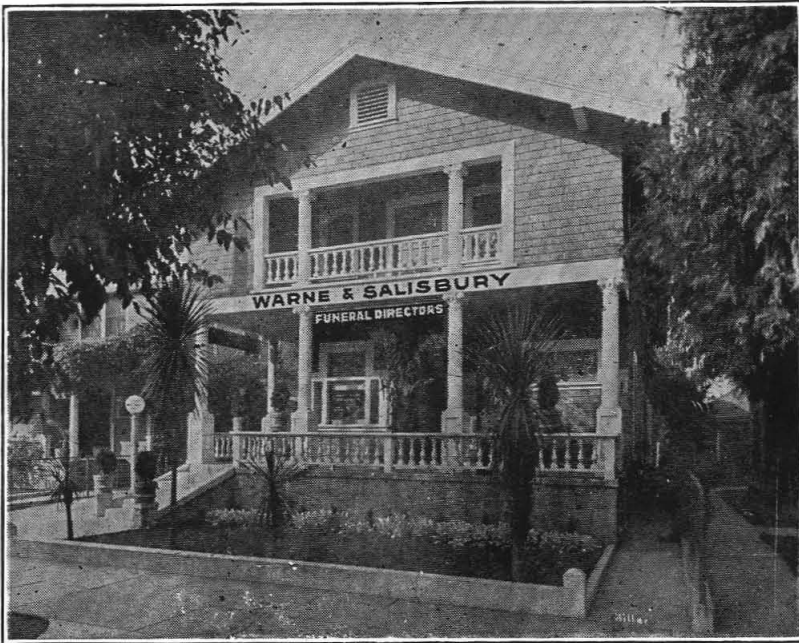


HAMBROOK AND.....(?)

THE 1921 BIG "T"

# THE BIG WHEEZE

For 1920 - 21



THE DORM

Ah, the dear old dorm. It typifies as nothing else the college life of the University.

\* \* \*

Published under the Pure Food and Drugs Act of 1906. - By the Asiatic Student Body of the Oneonta Park University.  
(Southern Branch)

THE 1921 BIG "T"

FORWORD

"Bull!"



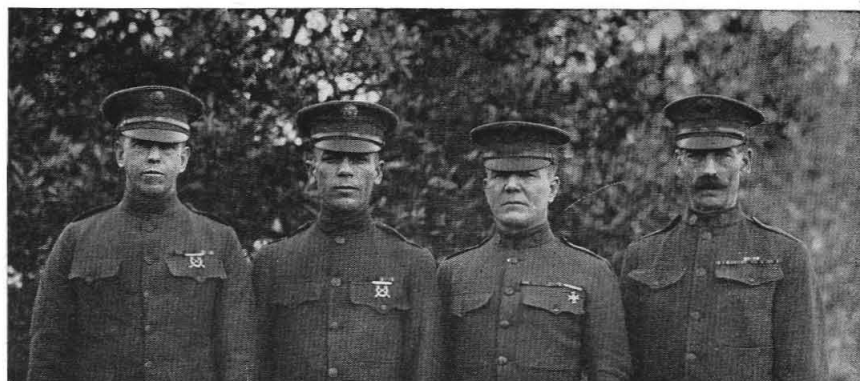
DOCK STAGNANT

B. S. at San Quintin, '06 - '16

Thirty-second Assistant Instructor in Impractical Electricity  
and Inapplicable Dynamics.

## THE 1921 BIG "T"

### OUR BOYS IN KHAKI



THE BATTALION

### THE LOST BATTALION

The above picture of the O. P. U. R. O. T. C. Battalion was taken just before sundown—the whole outfit being sober.

At the left is High Pvt. Balohay, lately a pilot in the remount service.

Next to Balohay is Lance Pvt. Kilo Gram; he used to produce scenic effects in the movies. He got his experience early in life.

Mr. Le Racey has not yet been commissioned, but is well acquainted with mules and pack animals. He is a good friend of Balohay's.

At the extreme right is the commandant. He's very timid and is trying to hide behind a pile of hay or something.

His name is Cook but he doesn't very well.

# THE 1921 BIG "T"

## SENIOR ROGUE'S GALLERY



STRONGBRETH, H. TOOESS—"Pyrex, Boston, Pi Beta Tau, transferred from M. I. T. (3). Teaching Foulrow (Chem) (3) (4). Ate and slept in Chem Bldg. (3) (4). Left Chem Bldg. once (3). Saw a cake of soap (4) (Thought it was a ham sandwich). Thought to be Bullshevistic.



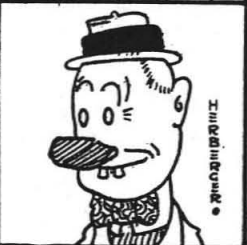
IDOL, SMALLBERG, "Snake"—Hollywood. Sigma Alpha Pi. Transferred to U. S. C. (To and fro) (1) (2) (3) (4) .....n. Tried to start a sorority at Broad-oaks (2). Disqualified. Tried to start Officer's Club (4). Nominated himself for president and club disbanded. Tried to win Honor Key, (1) (2) (3) (4). Missed it by twelve points, (1) (2) (3) (4). Should have been tried for murder.



McGOOFEY, LOTSA LEAD, "Speed"—Alhambra, Pharos and Dorm Club. Wore "Beanie" (1) (2). Wore arm band (2). Wore R. O. T. C. uniform to dance (3). Ass-ilomar (4). Y. M. C. A. (1) (2) (3) (4). Should become a teaching fellow.

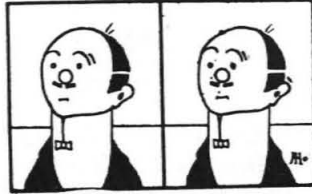


KNEC, HORACE S., "Pood"—Barley Flats, Pi Upsilon Delta. Joined and razzed C. E. Club (1) (2). Razzed A. S. B. (1) (2) (3) (4). Razzed Fraternities (1) (2) (3) (4). Razzed football team (2) (Only game he ever saw). Wore flannel shirt (1) (2) (3) (4) (Same one). Still razzing.



POLITISHUN, TINHORN, "Breezy"—L. A. Gnome Club (4) (Last three weeks). Ran for president Freshman Class (1) (2). Ran for pres. Radio Club (2). Ran for Band Leader (3). Elected Librarian (3). Should have run for Publicity Manager.

## ASSOCIATED STUDENT BODY



KLEIN

BARNES



At a very exciting Student Body meeting, in fact the most exciting ever held at the University, the following officers were elected: President—Major Arthur L. Klein, S. A. T. C. D. O. L. Publicity Manager—Manton M. Barnes.

Long before the time announced for the meeting the hall was crowded; in kingless English both Klein and Barnes were present.

After a solo by Manton nominations were in order.

Arthur immediately nominated Mr. Klein and Manton was right back at him, nominating Barnes. After that the nominations were closed and the balloting commenced. After many tedious ballots had been cast the vote remained the same, one to one, in favor of Mr. Klein. Finally Mr. Barnes went to sleep and Mr. Klein won by one vote.

Feeling much consideration for his late opponent, Mr. Klein told Mr. Barnes to ask for the softest snap in the Student Body offices, one which would hold many honor points, no effort and great opportunity for personal publicity. Mr. Barnes took the job of Publicity Manager.

The affairs of O. P. U. should go to Hell, no doubt, but these two men showed *that* much more interest than the rest of our A. S. B., anyway.



# THE 1921 BIG "T"



RAY

BINEY

MOKE

KORN )

PLUMB BOB

## THEM FRATS Zeta Iota Tau Zeta

(Don't-No-Me Club) Founded 1896 (B. C.)

*Fritters in Facultae*

Romeo R. Martel Sergeant Cook Prof. R. L. Daugherty

Albert Adams Merrill

and others

*Fritters in Collegia*

1921

Louis Korn

1922

Robert Gillies Willy M. Taggart \*A. C. Catland \*L. Judson Wells

R. Wallace Preston

1923

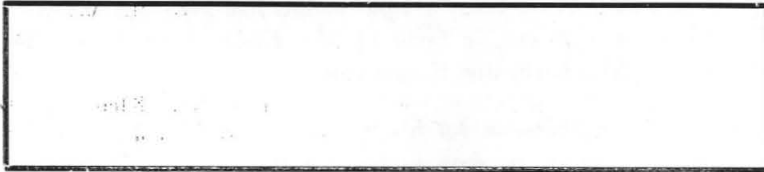
B. Quinn Evans

*Pledges*

W. Archimedes Schneider

\*Deceased.

## DISHONOR SOCIETY



SEARS

LARSON

GARFIELD

SMITH

ERB

## Five Mule Snakes

Haunted House: 3117 So. Raymond, L. A.

*Fritters in Collegia*

\*G. K. Smith '28 \*Louis Erb '29 \*R. Urmy Sears '30

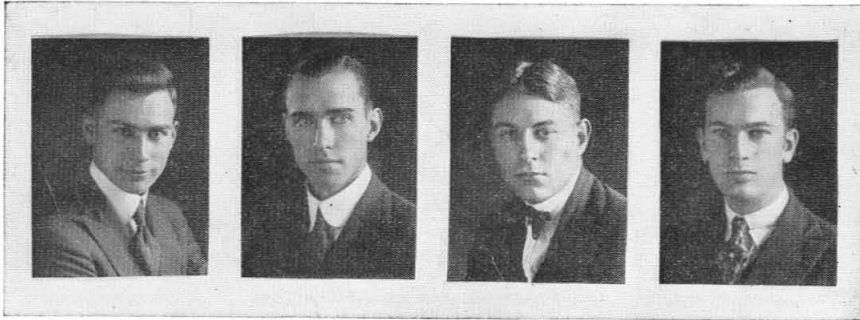
\*Linnay Larsen '31 \*Art Garfield '32

*Pledges*

N. E. Body

\*On leave of absence (indefinite).

## THE 1921 BIG "T"



MONK

RECEIVER

KLEAVER

MACK

### SPORTS

#### Major. Minor and Chromatic

"O. P. U. Wins Pool Title" appeared as a heading recently in the L. A. Times.

Well, gentle reader, here are the brave and loyal men of O. P. U. who brought home the bacon and other vegetables from the recent Pocket Pool, Hopping Rhombohedron, Dark John meet held recently at Ass-ilomar by the Sea.

At the extreme left smiles Mr. Monk De Blake three cushion, thumbs down, billiard shark. He won 12 points (not honor points).

Mr. Receiver easily won last place in his events but talked the referee into giving him two first places. He made 10 points.

Kleaver was the mainstay of the team, what one might call cleanup man. He could easily have won the bottle pool contest but someone put some ginger ale in the bottle, which Mr. Kleaver drank, becoming inebriated. Shocking! He lost 10 points.

Mr. Mackenzie's achievements are well known to his wide circle of friends. We haven't heard of them as yet.

# JOKES

## THE BEST WE GOT

### A TECH JOKE

"The Institute has provided on the campus one modern dormitory of California 'bungalow' type, two stories in height, with large, airy, and well-lighted rooms for sixty students. Several of the rooms have sleeping porches, and there are attractive dining, living and recreation rooms. Table board is furnished to the students living in the dormitory."—From Catalog.

\* \* \* \* \*

### OH PA-PA

"What is this, Pa-Pa?"

"That, my son, is a college a-th-lete."

"But, Pa-pa, why does it stride around so like a bear in a Louis XIV tea room?"

"College athletes in-var-iable-ly stride around like hardy mountaineers. It shows that they are rough."

"But, Pa-pa, it has such a loud voice."

"My son, they always talk so; it pays to ad-ver-tize."

"But do they always act so rough?"

"Almost always, es-pec-ially if they've just been weaned from high school."

"What does that letter mean, Pa-pa?"

"It means that the faculty let him play for one term, my son."

"What is that pin which it wears, Pa-pa?"

"That is a frat-er-ni-ty pin."

"Do all college athletes wear frat-er-ni-ty pins?"

"Almost all of them do, my son; they add to a fraternity's pres-tige."

"Are all college athletes like Jeems Bugbear?"

"Hush, hush, my child; it's time you were asleep."

Student in Applied Mechanics Class: "Does L equal summation 1's?"

Prof. Martel: "L"! No!

## THERE ISN'T ANY MORE

# THE 1921 BIG "T"

## THE CALANDER

(As she should have been)

Large number of bets of seventy dollars each received by business office from ambitious students.

89 Freshmen pass through the front doors.

First Semester-shirt appears.

Tech financiers reopen doors (new ones) for business.

89 Freshmen buy slide rules.

89 Freshmen buy note books.

Dick Hambrook, President of Student Body, rises and makes a speech.

Underclassmen learn value of cosmoline as an adhesive.

Garver has a spanking good time.

Mr. Beck eats cinders.

Rico blocks a kick.

H. Gockely buys a rubber slide rule.

Dan White ruins the Pool Room Ceiling.

Mr. Barret spends \$6.98 on Dormitory.

Rumored that Dorm is not paying for itself. (L.R. No. 6495.)

Louis Korn runs for Publicity Manager.

Mr. Barnes presents a resolution.

1 Freshman goes through front doors.

1 Frosh exchanges slide rule (never been used) for pillow (very soft).

Last chance to buy Annual at advance sale price.

One Frosh finds use for note book.

The janitor service should be better.

## THE 1921 BIG "T"

Gnome Club starts basketball practice.

"Shorty" Wilson has his hand stepped on.

"Shorty" decides to swear off smoking.

Dormitory renamed.

Tech prints names.

Editor wonders if jobs are hard to get.

Dan White instructs the upper classmen in their duties.

The girls all think "Rollie" is "Just grand."

Last chance to buy Annual at advance sale price.

Catland removes the result of summer cultivation. (It didn't match his hair anyway.)

First joke about Doc. Bell appears in "Tech."

Dan White cleans the "T" and is cleaned in Chemistry.

Faculty raises the requirements in scholarship.

Good jobs are being searched for by many.

Flannel shirt used as overalls.

Quirnbach's point of view and kindred subjects spoken of.

Moyse speaks by proxy.

Last day of advance sale of Annual.

Two freshmen learn how to multiply on slide rule.

Doctor Judy gives annual talk on "Life at Oxford."

'Leven Oaks misses some cutlery.

Dave Harries buys a ticket to the Policeman's Ball.

Armistice declared for four days to allow combatants to consume their share of turkey.

Y. M. C. A. wants some money.

THE 1921 BIG "T"



*Gobs in the Woods*



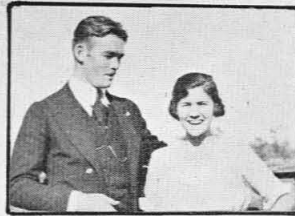
*She won it -  
!really!*



*¿Why Hube left us?*



*!My Gawd - Amos!*



*Berny and ? = !o*



*Gnomes and Gnomettes*



*GK and Co.*

## THE 1921 BIG "T"

Exams hit the campus.

And there aren't so many as there used to was.

Officers club formed.

Rumored that most of the officers need a club.

Tech prints some doubtful statistics.

Editor decides to swear off on using filler from the printers' private supply.

Sophomores give dance to guests of Hotel Alexandria.

Mid-year class desecrate the campus.

Press club formed.

Bill Isenhauser runs a spectacular race in the A. A. U. Relay Carnival.

Arm bands appear.

A Tech joke printed.

Dorm disguises for dance.

Pajamorino pulled off by Dorm Rats.

Sat.: Preston starts in the 2-mile run.

Sun.: Preston finishes in time to go to church.

Last chance to buy Annual at advanced sale price.

Junior class votes to give Formal Prom.

Junior class votes to give informal dance.

Pharaos bake weinies.

Eight days between rounds.

Funeral services held for those who "twoed out."

Many corpses.

Sigma Alpha Pi moves into new house.

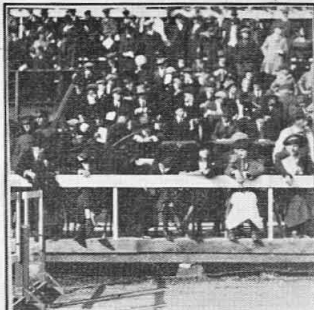
Dormitory reports many rooms to rent.

Ham and Erb lose half their patronage.

# THE 1921 BIG "T"



*Cave-Man*



*Where's Evans?*



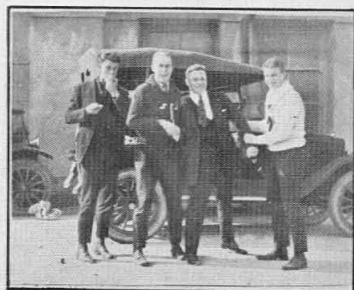
*Jazz*



*What Is It?*



*The Band*



*More Doggone Fun!*



*Sigs*



## THE 1921 BIG "T"

600 W farce perpetrated.

Actors reported doing nicely but unable to sit up.

Pasadena visited by movie company.

Y. M. C. A. wants more money.

Darnell pulls off a funny remark.

Darnell repeats funny remark 606 times before he gets new inspiration.

Hot Rivet issued.

Mr. MacKenzie becomes peevish.

English Prof. seeks revenge.

Jack Cox gets letter and varsity "T." 11:05 a.m.

Jack Cox appears with big, warm, blue sweater. 11:30 a.m.

Tech fails to furnish weekly kick.

Pharaos acquire a rival.

Junior Prom. Art drags a Lu Lu.

Barnes rises and nominates.

Erb nominated for Student Body president.

Barnes rises and nominates.

Erb modestly declines to be next year's yell leader.

Mr. Barnes rises and nominates.

Last chance to buy Annual at advanced sale price.

Time to hand all copy in.

Editor sits up all night.

Ed. thinks of Exces.

Oh Hell!

THE 1921 BIG "T"



P.U.D.'s



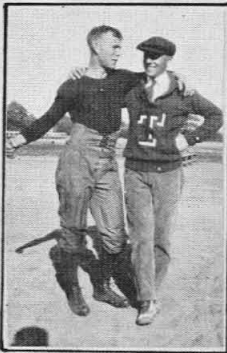
Oh boy!



Mountain Goats



Two Horsemen of the Potatoe Chips



The Corporation.



An ice crowd.

## THE 1921 BIG "T"

### INTERESTING BUT LITTLE KNOWN FACTS

There are many more men in the Junior class taking Econ than there were three years ago.

Larry Chandler is not recommending any special brand of hair tonic.

It is not absolutely necessary that one play basketball to live on Euclid avenue.

Jack Cox joined the Y. M. C. A. for the same reason that others did who needed "one"—and didn't get it.

Varney had one "Buzzard" article printed. Charley helped edit the "Hot Rivet."

Vesper was the originator of the India Rubber Slide Rule.

Doc. Bell dislikes to flunk Freshmen.

Hambrook and Erb run the "Dug Out" because they believe in benefitting their fellow men.

There are some books in the Library that are interesting to read.

Mr. Klein is the librarian in charge of these books.

Apollo used to look out the front doors.

The "Greek Man" has not been decorated for some time.

### UNINTERESTING BUT WELL KNOWN FACTS

The area of a circle is expressed by the formula  $\text{Pi } R^2$ .

There are  $6.06 \times 10^{23}$  molecules in one gram molecular weight of any gas.

Donald Whitely Darnell.

Jack Cox won a letter and is a member of the Varsity Club.

H. Vesper was credited with more Honor points than anyone else!

2 plus 2 equals 4.

"Hubie" Reeves had a "Honey."

Evans was a member of the Marine Corps.

Douglas is a member of the Glee Club and has a wonderful voice and plays basketball and "snakes" as a sideline.

Jay DeVoe is an authority on military matters.

The sum of the squares of the sides of a triangle is equal to the square of the hypotenuse.

Park Turril climbed Mt. Whitney.

Prof. Judy spent several years studying at Oxford.

U. S. C. has a knightly track athlete who is an expert on sport writing.

Water is composed of Hydrogen and Oxygen.

Evans was a member of the Marine Corps.

## LOCAL BOY WINS MILITARY PROMOTION

The honor and fame of our fair city is being ably upheld through the faithful and earnest efforts of one of the most prominent of our manly youths who are blossoming forth into manhood under the guiding hand of the curfew and the Sunday closing law.

This personage is none other than Jay DeVoe, who has been attending Throop School since graduating with Millie Smith and Hank Robinson.

Mr. DeVoe saw active service during the war in the S. A. T. C. T. C. T. and became so fond of army life that he re-enlisted in the R. O. T. C. C. I. T. at the end of the war. He is at present serving the third year of his enlistment and has at last been promoted to sergeant, which responsible position he fills with the patient endeavor that is so characteristic of him.

Mr. DeVoe said when interviewed on a recent visit here that he owed his intrepid advancement to a paper on "Obeying Orders" that he recently wrote, and to the fact that he always attends summer camp. Jay made a very high score on the rifle range and very nearly won a marksman medal. These medals are given to the next to the best shots in Uncle Sam's army.

Mr. DeVoe hopes that by going to Summer Camp again this year he will be promoted to platoon sergeant by the last of next year.

### From the Small Town Papers

"You can't shaka shimmey here" said the landlord; "we have no laundry facilities!"

\* \* \* \* \*

She—Dick sure has a winning way with the women.

Her—Yes, he won fifty cents offa me last night.

\* \* \* \* \*

Helen—Oh, Harry, may I wear your fraternity pin to the dance tonight?

Harry—Why, certainly, dear, you ought to wear something.

\* \* \* \* \*

"Do your shoes hurt?"

"No, but my feet do."—*Virginia Reel.*

Mr. Raymond Preston has just finished a most enjoyable week end visit in his home town and had a great deal to say about his college doings. Mr. Preston is very active in college activities of all kinds and was one of the mainstays of the track team. His friends were glad to hear of his success.

### Society Note

Good authority has it that our Monk Blakeley, Y. M. C. A., local chapter, is intending to spend the summer as an Indian guide at a fashionable resort in the Canadian wilderness.

## THE 1921 BIG "T"

TAU BETA PI, NATIONAL HONORARY ENGINEERING FRATERNITY, ANNOUNCES THE INSTALLATION OF ITS THIRTY-SEVENTH NATIONAL CHAPTER, BETA OF CALIFORNIA, AT THE CALIFORNIA INSTITUTE OF TECHNOLOGY ON JUNE 11, 1921; FORMER NATIONAL VICE-PRESIDENT EDWIN F. GILLETTE, INSTALLING OFFICER

---

### MEMBERS

#### ALUMNI

Gene B. Haywood, '18

Fritz W. Karge, War '18

Russell M. Otis, '20

#### SENIORS

Raymond W. Ager

Wynne B. Mullin

Jesse Arnold

Richard W. Stenzel

Philip S. Clarke

Henry I. Scribner

Edward G. Forgey

Sinclair Smith

Frank C. Makosky

Alfred J. Stamm

#### JUNIORS

Clyde R. Keith

Thomas G. Myers

Alfred W. Knight

Farrand Wilson

Frederic A. Maurer

Loren G. Symons

Howard G. Vesper

THE 1921 BIG "T"

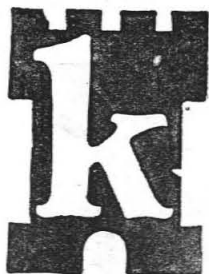
## OUR ADVERTISERS



Bill, the Billboard Enigneer says, "Som eof these here adds are sure worth  
.....looking into."

BOOK VII  
Charles W. Varney  
Advertising Manager

## THE 1921 BIG "T"



Kuppenheimer  
Good Clothes

—An Investment in Good Appearance

**H. C. Hotaling & Co.**

52 and 54 East Colorado St.

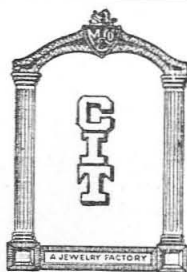
Smart Clothes for Men

### JAZZ!

Whaley on a grand  
Piano,  
A buzz saw  
Nail,  
Sawing thru a  
Bush and Barnes,  
A load of iron pipe on a  
Cobble pavement,  
A saxophone with a  
Broken reed,  
The Riveters' Convention,  
A trombone with the  
Colic,  
A night  
In a Harem,  
The crash of dishes  
In the kitchen sink.  
Jazz?  
Hell Yes!

### DIZZY

Dance?  
Oh Gosh! Like a dish of Jello  
In an earthquake!  
Eyes?  
The windows of her soul  
So dark and muddy!  
Skin?  
The kind you love to touch!  
Lips?  
The taste tells!  
Form?  
Like an Arrow Collar—  
It fits!  
She was a  
Rocky, rollicking, fluffy haired  
Dizzy Blond!  
Oh Boy!  
But I had to quit her.  
When we danced  
Her wonderful hair  
Was always getting in  
My Gum!



### RECOGNITION

Will be accorded you NOW  
and in the days ahead, by  
wearing your School Pins

Your Pins Are Made

—By—

**J. A. Meyers & Co.**

6th Floor Metropolitan Bldg.

"Always at Your Service"

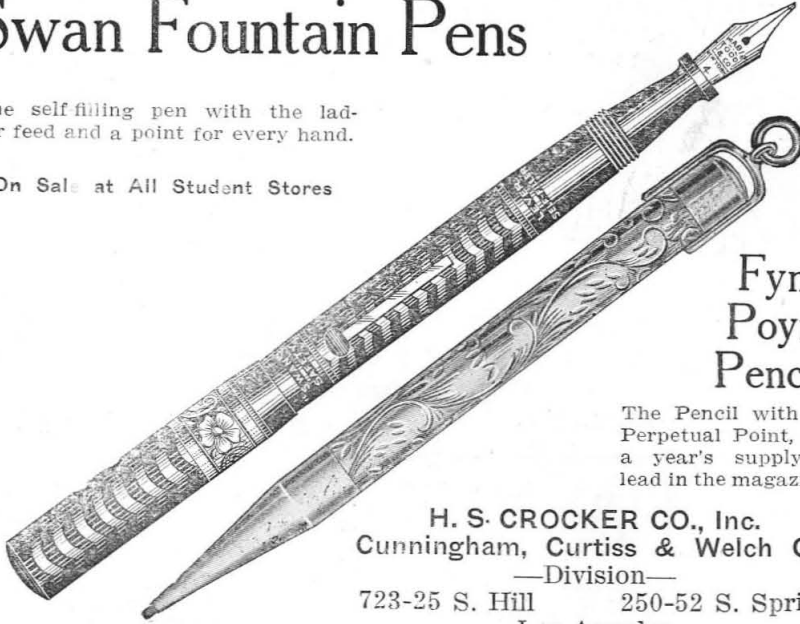
Since 1912

THE 1921 BIG "T"

## Swan Fountain Pens

The self filling pen with the ladder feed and a point for every hand.

On Sale at All Student Stores



## Fyne Poynt Pencils

The Pencil with the Perpetual Point, and a year's supply of lead in the magazine.

H. S. CROCKER CO., Inc.  
Cunningham, Curtiss & Welch Co.  
—Division—  
723-25 S. Hill      250-52 S. Spring  
Los Angeles

## Saving, Thrift, Character

These three good qualities are so closely related that you seldom find one without the other. The habit of saving establishes thrift, and thrift improves the quality of the character. You will find an account with a Pasadena Bank a great incentive to save more money : : : : :

Pasadena Clearing House  
Association



## THE 1921 BIG "T"



The Last Word in  
**DIAMOND JEWELRY and  
WEDDING RINGS**

The popular wedding ring of today is of carved design, in gold or platinum—or a diamond set circlet of fancy pattern. Our long experience in diamond merchandising is the best guarantee any patron may desire.

**J. HERBERT HALL CO.**

96-98 East Colorado Street

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**GEORGE A. CLARK COMPANY**  
HATTERS—HABERDASHERS  
KNOX AGENCY

84 East Colorado Street

8 South Raymond Street

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# Reed & Miller

SPORTING, OUTING

—and—

ATHLETIC GOODS

332 East Colorado St.

PASADENA, CAL.

---

He—My father was killed in a feud.

She—I never would ride in one of those cheap cars.

\* \* \* \* \*

"I'm getting the hang of it now," said the murderer, as the trap was sprung.

\* \* \* \* \*

Dan—What would you do if I should kiss you?

Hon—Pretend to be surprised.

Dan—And if I shouldn't?

Hon—Be surprised.



WE CAN NOT MAKE ALL THE SCHOOL AND COLLEGE RINGS, INVITATIONS, CUPS, DANCE PROGRAMS, PINS, ENGRAVED CARDS, MEDALS AND DIPLOMAS WHICH ARE SOLD, SO WE MAKE ONLY THE BEST!

## THE V. ALLEN CO.

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JEWELERS · ENGRAVERS · STATIONERS

824 SOUTH HILL ST.

Tel. 60053

LOS ANGELES

## THE 1921 BIG "T"

### D. C. EXPERIMENTS

Here's to it,  
And at it and to it,  
And to it and at it  
Again.  
If you don't do it,  
When you get to it,  
You'll never get at it  
Again!  
\* \* \* \* \*

#### LOVE ALL

I envy the tennis ball.  
Everyone serves him.  
He has a winning disposition.  
He is involved in many love affairs.  
No one blames him for raising the deuce.  
He is not annoyed by a racquet.  
He does not object to be bounced.  
Though brought into court, he is never sentenced.  
He isn't expected to be square.  
He can roll home without unpleasant comment.  
I envy the tennis ball.

---

## "Not by gain But by Service"

—Carlyle.

The value of an institution to the community is, like that of a man to his generation, measured by service rendered—not by gains accumulated.

We expect to be judged by this standard and thereby to merit confidence, for we render thorough service, **always**, because of the personal consideration given to each detail.

Moreover, quality for quality, our prices are very, very reasonable. Only complete Ambulance equipment in Pasadena.

## Reynolds & Eberle UNDERTAKERS

Fair Oaks and Union

Phone Colorado 37

Nurse in attendance

## THE 1921 BIG "T"

HOME OF THE SUNSET PHOTO ENGRAVING COMPANY

Where all the cuts in this Annual were made. One  
of the finest and best equipped shops in the  
Country. Day and night service.



## Sunset Photo Engraving Company

14977

Pico 2646

325-27 East Sixth Street

- - - -

Los Angeles, Calif

## THE 1921 BIG "T"

HU NOS!

I wonder why  
The City Dads  
Put  
Orton,  
Pasadena Hospital,  
Broadoaks,  
And Tech  
All on the same  
Car line?  
Gee!  
Ain't Science  
Wonderful?

\* \* \* \* \*

I have been told  
That they have very charming grounds  
At Orton's School, but  
I have never succeeded  
In evading that swarm of chaperones  
For a sufficient period  
To find out.

---

# ROYAL YOSEMITE LAUNDRY AND DRY CLEANING CO.



Telephone Colorado 67



Leave Your Laundry With Our Official Agent

E. J. WEITEKAMP, Room 26, Dormitory

465 South Raymond Ave.

Pasadena, Calif.

## THE 1921 BIG "T"

### CALIFORNIA COMMERCIAL COLLEGE

625 South Hope Street, Los Angeles

—A Commercial educational institution, known not only all over the United States, but also in Latin America. Characterized by thorough courses, accredited methods, progressive ideas, recognized facilities, individual instruction, and noteworthy graduates. Offers 18 strong courses, and employs 16 well-trained and experienced teachers.

—These features justify your choice of our school for high-grade commercial training. Positions guaranteed to graduates.

Call, telephone or write for  
Victory Year Book of Information

Call 62634

W. H. H. GARVER, Pres.

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Los Angeles

**BROWN & LINDSTROM CO.** Opp. P. E. Depot

Repairs

### THE ORCHID

Florist

CORONA

### TYPEWRITERS

ROYAL

—Noiseless—

SUNDSTRAND ADDING MACHINES

WE SELL — RENT — REPAIR ALL MAKES

ANDERSON TYPEWRITER CO.

Colorado at Raymond : : : : Phone Fair Oaks 2

**PAYNE'S DANCING ACADEMY**  
2018 Orange Street ~ ~ ~ 556631

Complete Courses  
in  
Ballroom Dancing

## THE 1921 BIG "T"

BULLOCK'S CLOSES SATURDAY AT ONE O'CLOCK  
EVERY SATURDAY THROUGHOUT THE YEAR

# Bullock's Men's Store

—A Store devoted exclusively to Men's and Young Men's Furnishings—a Store with Friendship for its aim; Quality, Value and Service building personality more attractive as the days go by.

—When one wears Shirts, Ties, Hose, Gloves, Collars—and carries Handkerchiefs or a Cane from Bullock's Men's Store, the sense of correctly equipped is ever with one. Many other accessories, such as Underwear, Bath Robes, Smoking Jackets, Belts, etc., are offered in good assortment.

—Bullock's Men's Store is a good place for Men to know. It's on Bullock's First Floor—with direct entrances on Broadway and on Seventh Street

**Bullock's**  
*Los Angeles*

Quality

*Complete Equipment for Your Outing Trip*

HUNTING

CAMPING

FISHING

TENNIS  
GOODS

**PASADENA HARDWARE COMPANY**

AUTO  
FIXINGS

Service

66-76 W. Colorado St.

1 o'Clock Saturdays

# THE 1921 BIG "T"

**STYLE HEADQUARTERS**  
Where Society Brand Clothes are sold



T hardly seems good judgment to offer arguments on the importance of good to a body of college men, for this set of young fellows is looked upon as the best dressed class in America.

But it's good horse-sense for us to impart information as to where you can get the best clothes, since we know we have 'em, isn't it

Very well, then—Brenwood Clothes for your vacation time—for now—for any time.

*Brenner and Wood*

RESPONSIBLE FOR ALL BRENWOODWEAR

155 East Colorado St.

Pasadena

STOP!

And Once  
When I was coming home  
From a  
Tech Dance  
In this man Hill's  
Automobile  
A girl  
Said to me,  
"I'm not cold!"

\* \* \* \* \*

No!  
She wasn't—  
It was  
I  
Who was  
Chilled!

17



**HERBERT F. BROWN**

*Stationery, Books and Picture Framing*

190 East Colorado St. :: Pasadena, California

## THE 1921 BIG "T"

### Southland Beverage Co., Inc.

Manufacturers and Blenders of High-Grade Carbonated Beverages

199 S. Fair Oaks Ave.

Pasadena, Calif.

Phone F. O. 199

*Jarvis & Prinz*

::

Graduation Gifts and  
Engraved Cards

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