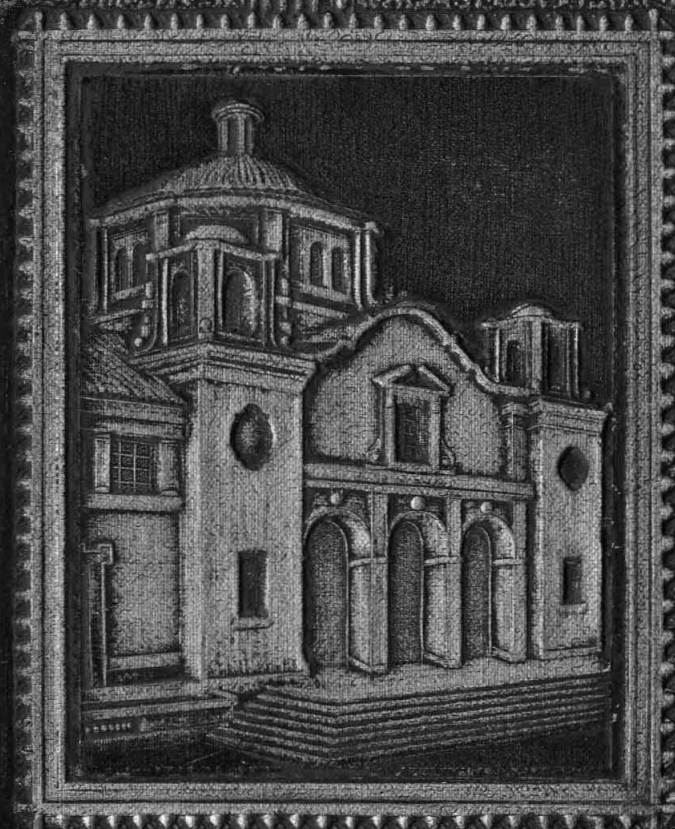


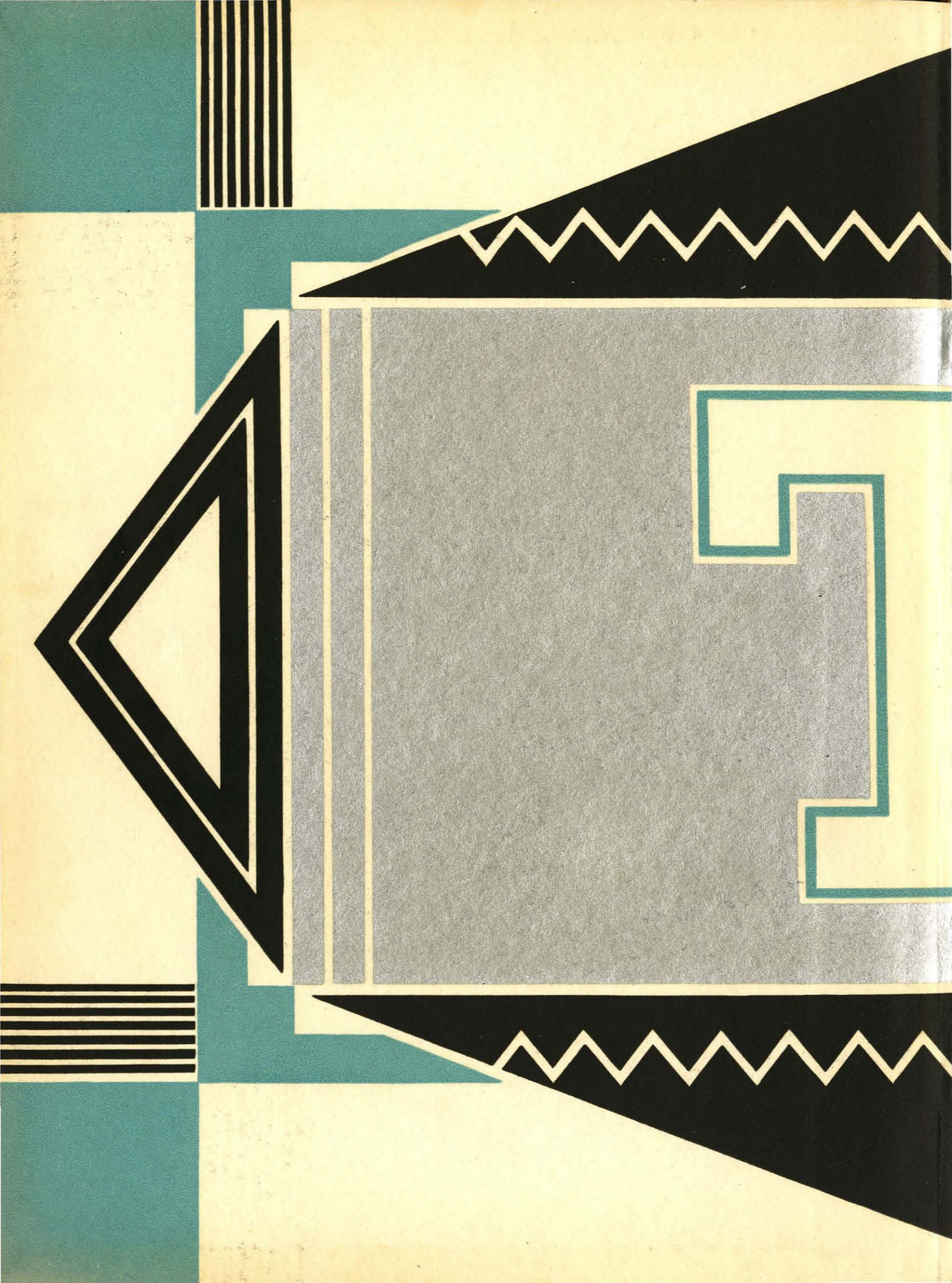
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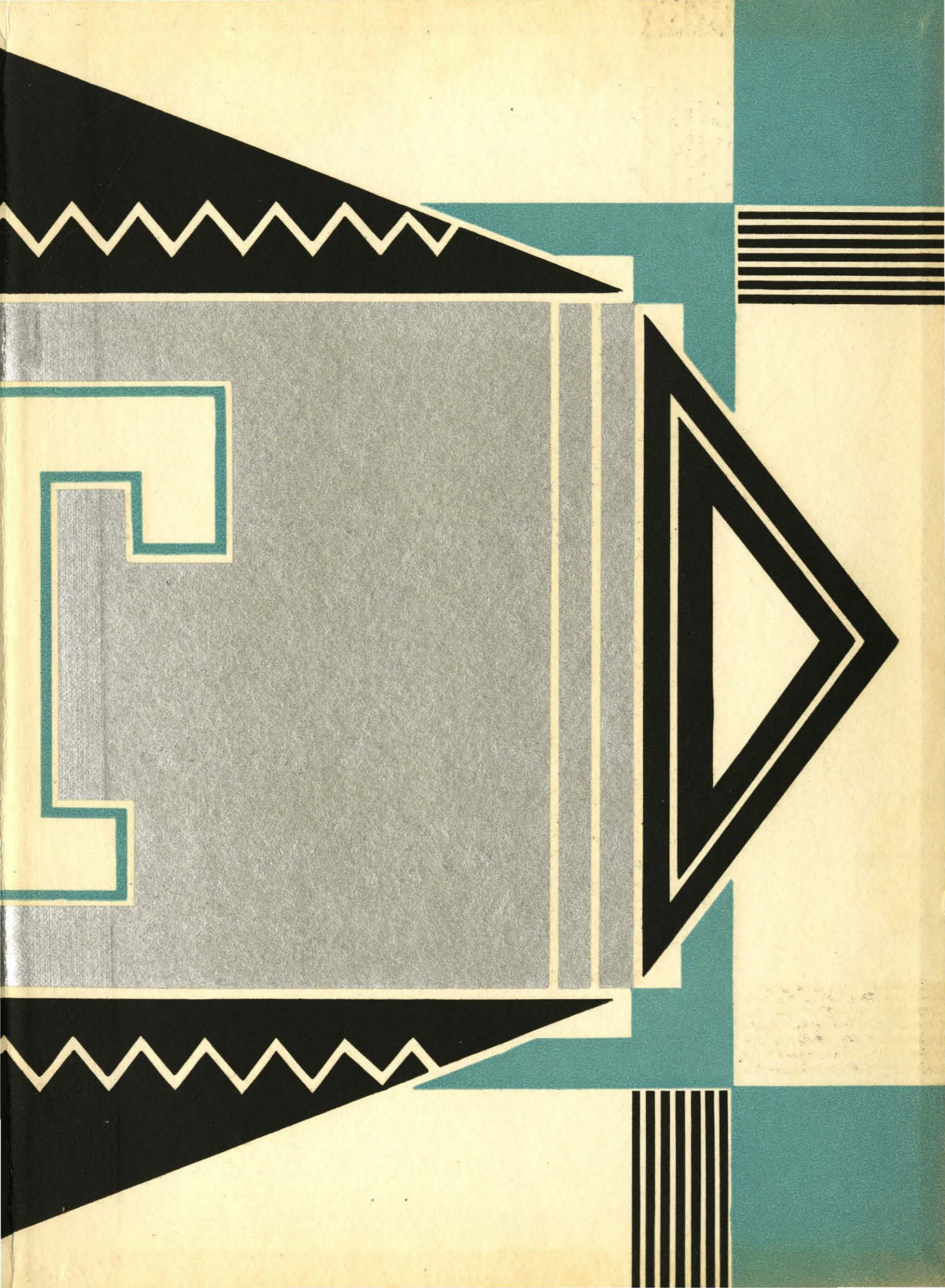
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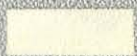
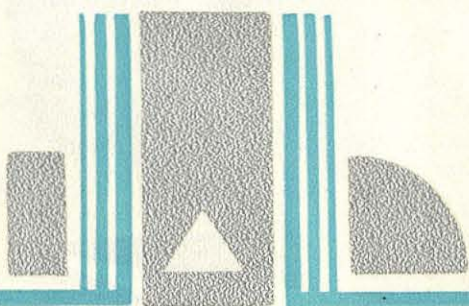


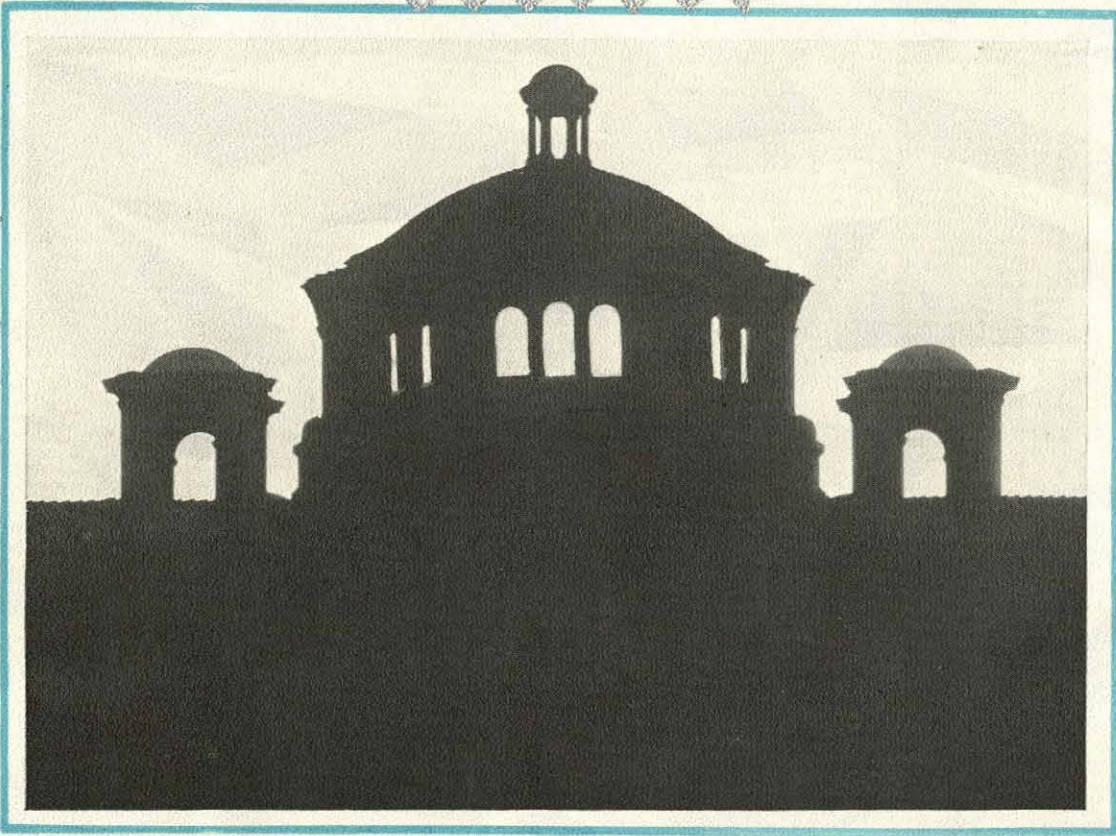


THE BIG

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1931





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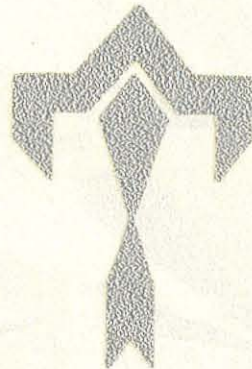




F O R E W O R D

To present and preserve the glories,
achievements, and memories of a year at
Tech . . . to remind the forgetful of the
progress that has come—and is to come—
as a result of the tireless efforts of those to
whom this book is dedicated . . . to make
this record one of art and beauty . . .

these have been the hopes and
aspirations of the staff.





IN 
MEMORIAM

JOHN W. BAER

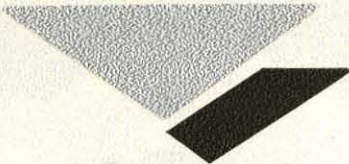
EUGENE P. CLARK

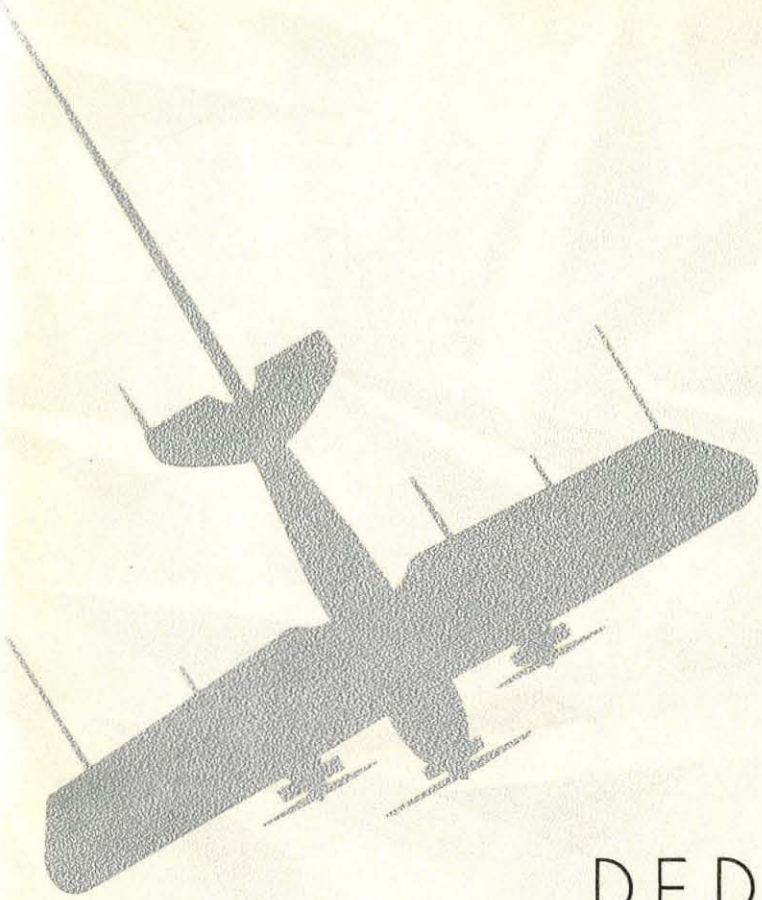
FRANCIS A. HARDY

ALBERT A. MICHELSON

FREDERICK H. STEVENS

JOSEPH E. TILT






DEDICATION

To those earnest and unselfish scientists who have devoted, and are devoting, their lives to the discovery and application of the laws of our mysterious universe, and particularly to those investigators in aeronautics whose research has made, and is making, possible the spectacular achievements of today, this volume is respectfully dedicated.





C O N T E N T S

Book I. . . . California Tech

Book II. Athletics

Book III. Activities

Book IV. Humor

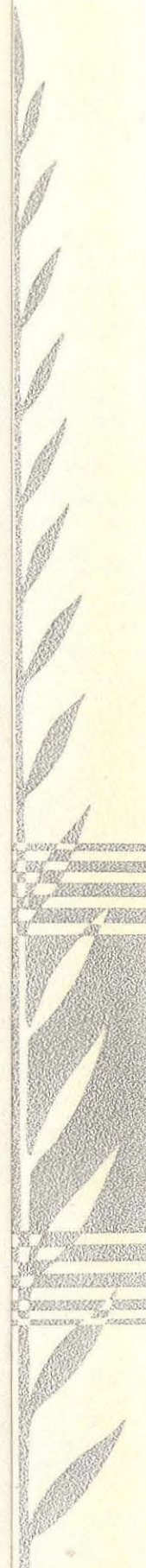


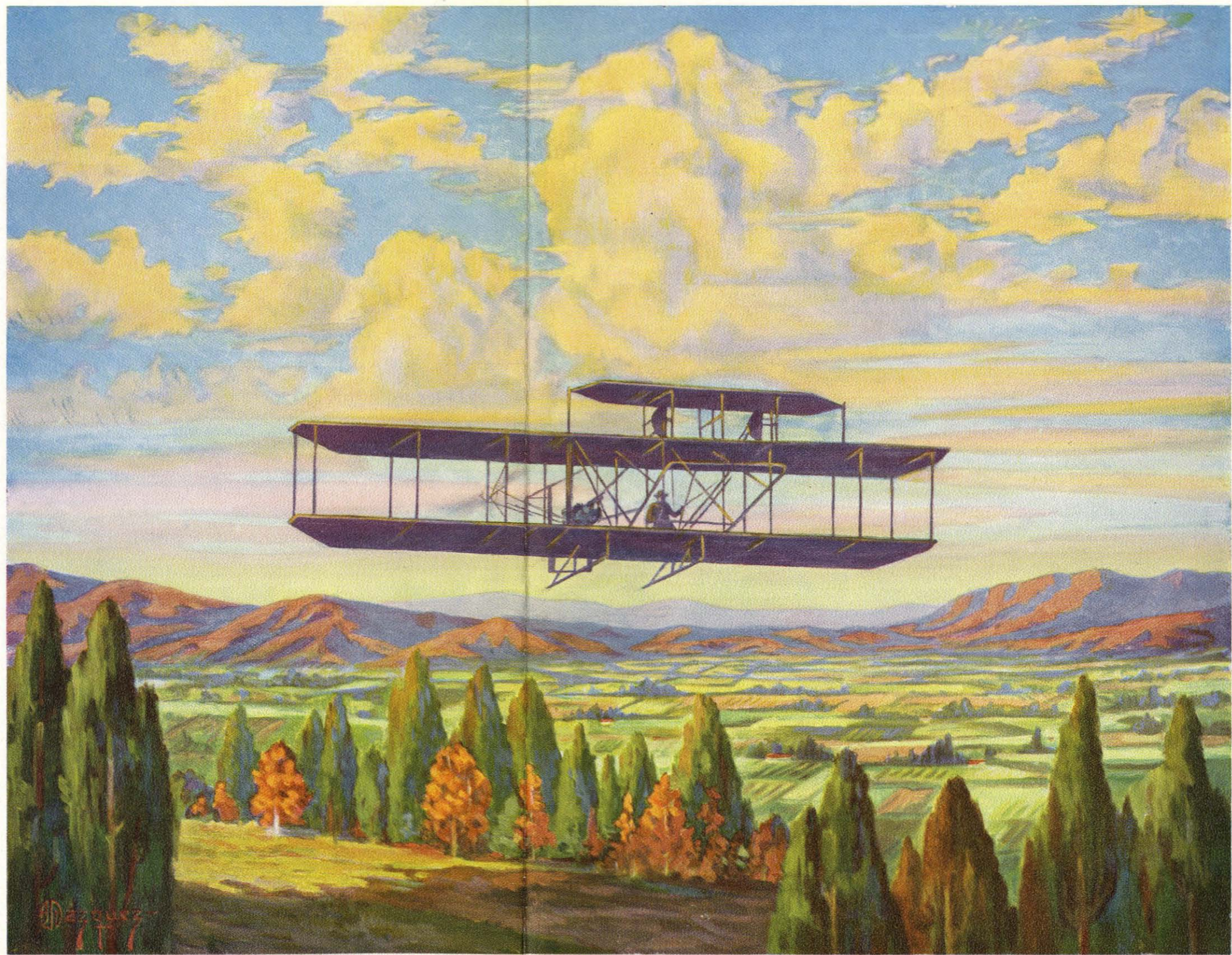
Out of Eternity this new day is born.

--CARLYLE

BOOK I

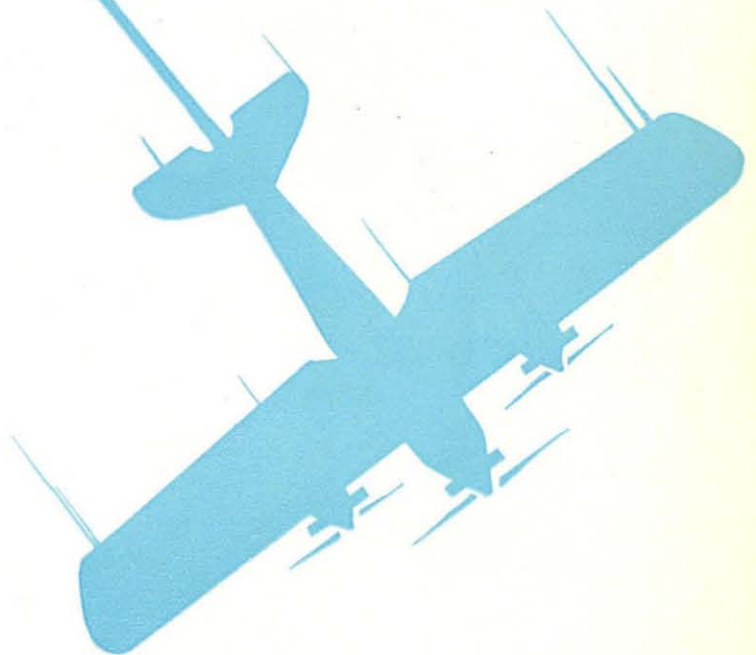
CALIFORNIA TECH



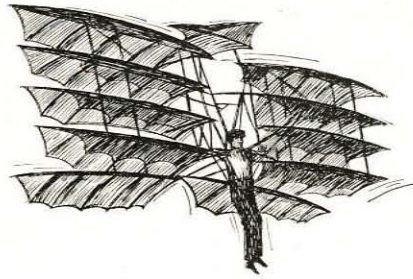
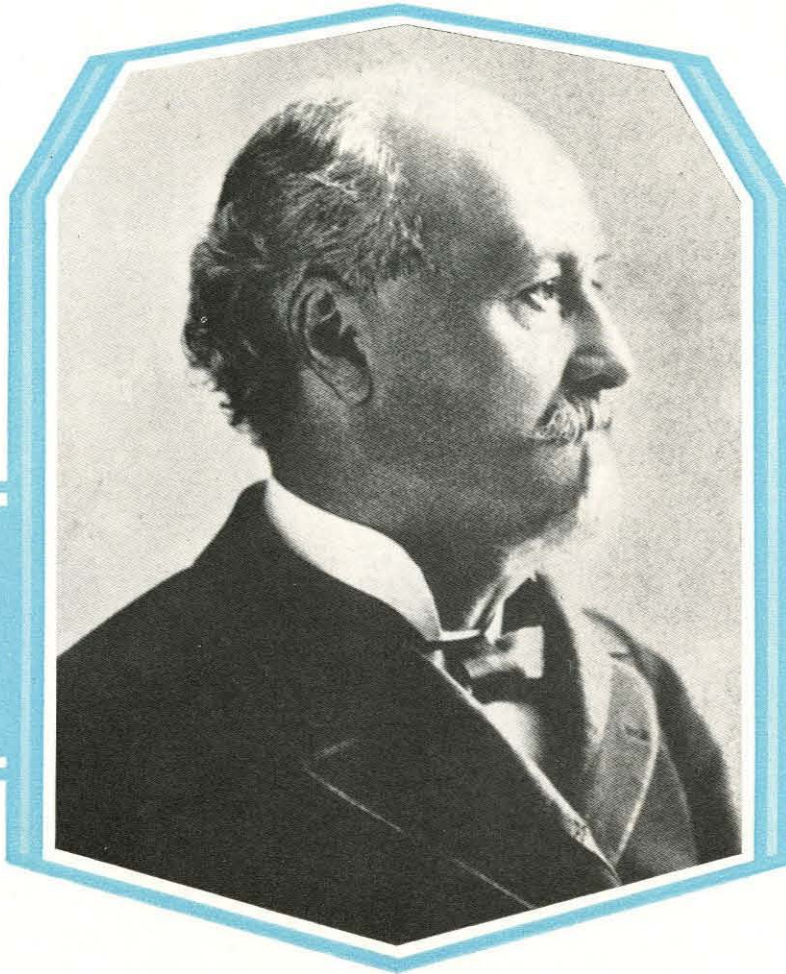


C O N T E N T S

FACULTY ADMINISTRATION
STUDENT ADMINISTRATION
CLASSES
C. I. T.



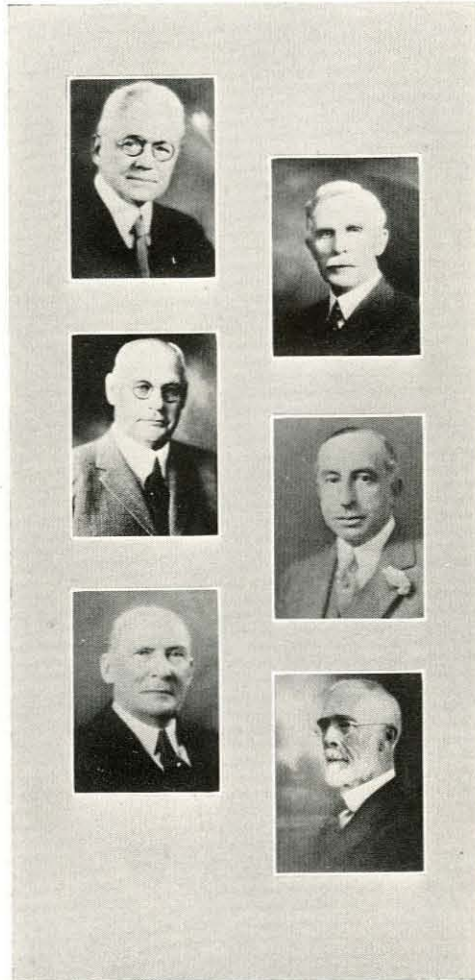




OCTAVE CHANUTE

American engineer whose gliding work in the United States was a major factor in encouraging the Wright brothers to experiment in aeronautics.





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FACULTY



John R. Macarthur

To the Editor of the Big T:

The graduates of 1931 undoubtedly will have a sympathetic and constructive interest in the development of our campus life, for they have had a large part in the plans which have been made for it. To those who remain and who are to form a vital part of the housing project, especially to the class of 1934, may I say this? There are many problems to be solved. If you approach them with the intelligence, fairness, and patience which you apply to your studies; if you are willing to subordinate, within reason, your own wishes and ideas to the general good; if you remember that "Rome was not built in a day;" and, above all, if you realize that good will and a disposition to co-operate will go far towards realizing the ideals which we have, then I have no fear but that in years to come the Institute's Student Houses will be pointed to as a distinctive contribution to American College Education.

—John R. Macarthur,
Dean of Freshmen

Professor Harry C. Van Buskirk, besides being one of the most popular professors on the campus, has charge of the Registration at the Institute, a very difficult and varied job. This alone would be sufficient recommendation, but Professor Van Buskirk goes farther than this, for he is also professor of mathematics. It is through his position as Registrar, though, that he is able to come into personal contact with the students, and it is by this means that he has gained his popularity.

Professor Van Buskirk is very intimate with the affairs of the Institute, and has an even greater interest in the school by reason of his term of service. He has been here at the Institute exactly twenty-seven years, having first come in 1904, and thereby it may be seen that he has devoted the greatest portion of his life to the school.



Harry C. Van Buskirk

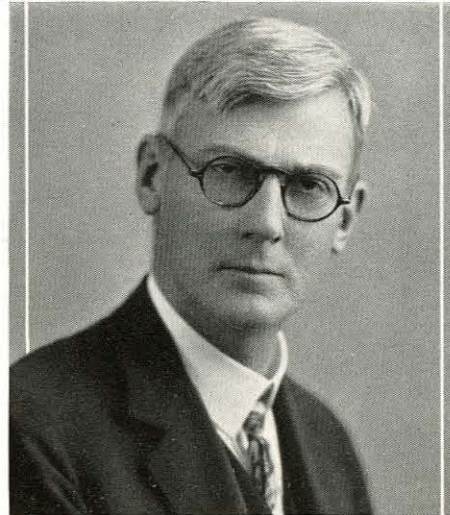
ADMINISTRATION

To the Editor of the Big T:

In responding to your request for a short message to the Student Body, I find myself reviewing what I consider the dominant characteristic of two great men who have visited the Institute during this academic year. Both of these men are outstanding physicists, Paul Ehrenfest and Albert Einstein. They speak not merely with authority but as great leaders in their own field. Each of them, by word and act, has indicated that after all his real interest in this world lies in the realm of our common humanity.

The improvement of the general level of opportunity for mankind, the devotion of the individual to the interests of his fellows—such questions are important to these great men. To quote briefly from Professor Einstein's address before the Student Body—"Concern for man himself and his fate must always form the chief interest of all technical endeavors. Never forget this in the midst of your diagrams and equations." I feel I cannot do better than again call this message to your attention.

—Frederic W. Hinrichs, Jr.
Dean of Upperclassmen.



Frederic W. Hinrichs, Jr.



Edward C. Barrett

Another popular and well known figure around the campus is Edward C. Barrett, Secretary of the Institute. Mr. Barrett has been secretary for a good many years, since 1911, in fact. There is not a busier man around the school than Mr. Barrett, for in his capacity he must also act as Assistant Treasurer, and therefore the business office is under his care. This alone would give him sufficient to do, but he is also a member of the Executive Council. It can therefore be seen that he is quite an important figure in making the wheels of the school go around.

Everyone knows and appreciates the difficulties which Mr. Barrett must face in his work, and it is his tact and resourcefulness in handling the business affairs of the students here at the Institute when they are in difficulty that has won for him his popularity and the respect of the students.

FACULTY

PHYSICS

A great percentage of the distinction of the California Institute of Technology is due to the marvelous organization and work of the Norman Bridge Laboratory of Physics. The attainment of this position of honor the Institute owes to the genius and super-human ability for organization, research and development of Dr. Robert A. Millikan, Director of the Norman Bridge Laboratory of Physics and Chairman of the Institute Council. Dr. Millikan is one of the foremost scientists of the world today. His latest completed experiment is the discovery and investigation of the Cosmic Rays.

In the Department of Physics we have many professors of note. Dr. Paul Epstein, formerly of the University of Zurich, Prof. Fritz Zwicky, and Dr. Richard Tolman are all noted men in their fields.

Undoubtedly the most noted event of the year was the arrival of Dr. Albert Einstein in the United States for a visit. We at the Institute were particularly honored by his residence and



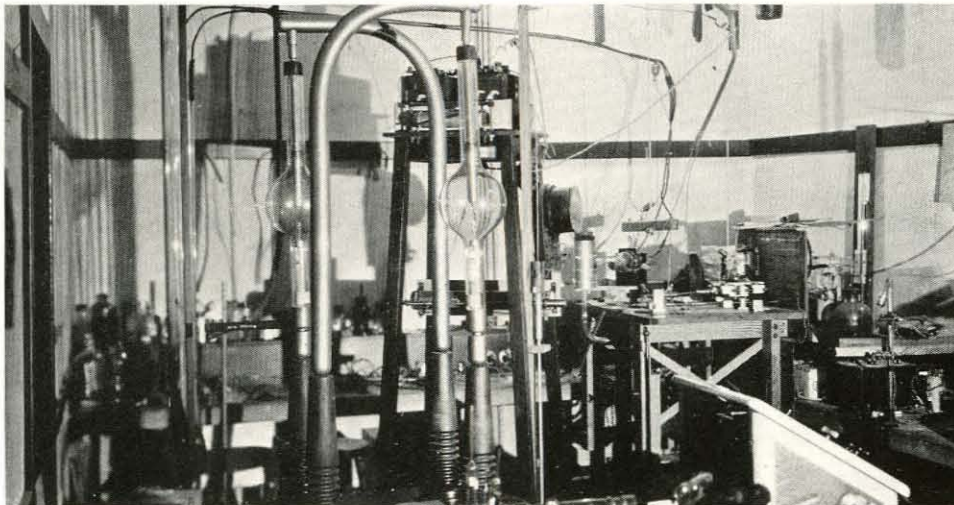
Dr. Robert A. Millikan

work at the Institute. Not only his ability in the field of theoretical physics, but his judgment in all matters brand him truly a great man. During his stay in California, Dr. Einstein presented the unified field theory to the physicists here.

Nor must we forget the improvements which are being made at the Institute. The Astro-Physics Laboratory is now being built. Upon its completion, together with

the new 200 inch reflecting telescope at present in the process of construction, Tech will soon become the center of the astronomical world. In collaboration with the Mount Wilson Observatory, much progress will be made in this field.

The undergraduate courses in Physics are thorough and comprehensive, embracing a preliminary two year course in mechanics, heat, electricity, sound, and light, and in the senior year courses in analytical mechanics, electricity, and magnetism, all presented to the students by competent instructors.



ADMINISTRATION

CHEMISTRY

Much of the renown that has come to Tech has been attributable to the Department of Chemistry. This department ranks second only to the Physics Department in size of personnel and importance of research projects carried on. The head of the department, Dr. Arthur A. Noyes, is one of the outstanding chemists of the country, and is a recognized authority on the subject of qualitative analysis, more particularly of the rare elements.

The policy of the Institute has been to give a thorough basic course in this extremely important subject to all of the undergraduate students, even though they intend to specialize in other fields. In addition to this foundation course, other advanced courses are given for those who intend to specialize, though there is little opportunity given for specialization in the undergraduate course, but the basic courses given are exceedingly thorough.

Many special research problems are being



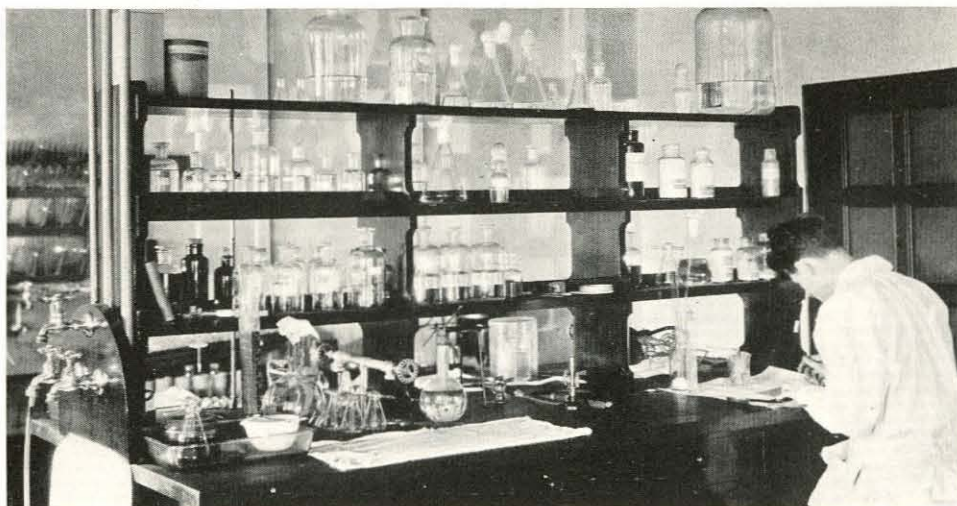
Dr. Arthur A. Noyes

investigated by members of the graduate division. The courses of the graduate seminars are directed by graduate students, professors, or outside authorities on the subject under discussion. Many of the industrial problems of individual chemical industries are being solved at the Institute by the graduate students.

Physically the Chemistry Department is well equipped. The Gates Chemical Laboratory

with many complete class laboratories, research laboratories and class rooms is at the disposal of the department.

A well equipped stock room offers all of the apparatus and material necessary for the ordinary work of the students, while complete shops are also available to manufacture any special apparatus that might be needed. All of the books dealing with the subject in the Institute library are kept readily available in a separate library in the building.



F A C U L T Y

MATHEMATICS

The Mathematics department of the Institute is one of the outstanding of its kind in the country, due to the remarkable personnel and its close collaboration with the other sciences. Through its close connection to the physics, chemistry, and aeronautics departments it is able to carry to completion many of the technical results obtained by experimental research.

Dr. E. T. Bell, one of the greatest living mathematicians in the country (at present President of the Mathematical Association of America) is head of the department. His important work at present is in the theory of numbers for which he has become famous. Dr. Harry Bateman has been closely connected with aeronautics department in his work and has helped incalculably in mathematical physics here at the Institute. It is men of this calibre that attract men of similar ability and have built up the department here at



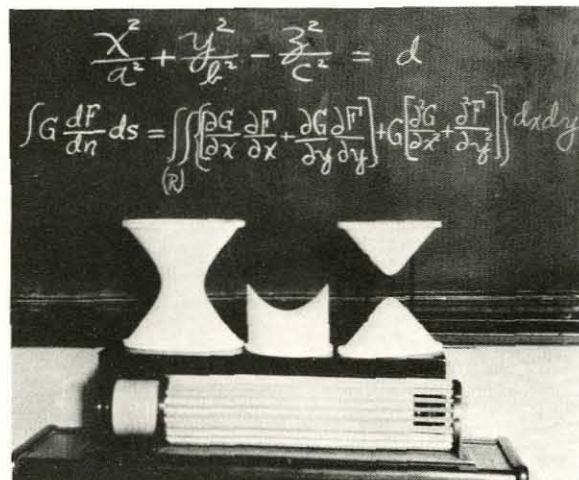
Dr. Harry Bateman

Tech. The undergraduate courses in mathematics are very sound and thorough, covering differential and integral calculus in addition to analytical geometry. These courses lay the foundation for advanced calculus, differential equations, vector analysis, differential geometry, and complex variables. This enables the undergraduate to take mathematics not only as a pure science itself, but as a practical

aid to study and research in any other science.

Economics is also well represented in mathematics and the probability of least squares, statistics, and other business courses are given by Dr. Clyde Wolfe, who is well known for his improvements on calculating machines.

With the erection of the Astro-Physics building and the study of astronomy, more opportunity will be open for mathematics research at the Institute and its development will proceed to cover this field as well as the others.



ADMINISTRATION

BIOLOGY

Although a unit of fairly recent origin on the campus, the establishment of a Division of Biology has been effected along with the completion of the Wm. G. Kerckhoff Laboratories of the Biological Sciences, to provide offices and laboratories for a staff specializing in biological research and experimentation. Under the enthusiastic leadership of one of America's greatest authorities in this field, Dr. Thomas H. Morgan, as chairman of the Division of Biology, has organized his department into its various branches with their leaders. Already groups of investigators have begun work in their special fields.

Most prominent among the important studies being conducted in the biological laboratories is that of heredity, both the plant and animal phases of this subject being under investigation and experimentation. The men chiefly interested in animal genetics, aside from Dr.



Dr. Thomas H. Morgan

Morgan, include Dr. A. H. Sturtevant and two men associated with the Carnegie Institution at Washington, Drs. C. B. Bridges and J. Schulz. In connection with the biology department's experimental farm at Arcadia, Dr. Anderson and Mr. S. H. Emerson are studying heredity in two widely experimented plants, Indian corn and the evening primrose.

The recent purchase of a zoological marine station at Corona del Mar resulted in the organization of summer work there under the supervision of Prof. B. S. Tyler, Dr. K. J. Belar is doing research with cells and cellular division, while Dr. Robert Emerson is working along biophysical lines with chlorophyll.

A small building completed early this year across the street from the campus on the north houses the laboratory and office of Dr. H. E. Dolk, who has recently been added to the department's personnel.



FACULTY

AERONAUTICS

The Daniel Guggenheim Graduate School of Aeronautics, established here in 1926, is on the threshold of a period which promises to be fruitful in scientific results. The final calibration of the graduate school's huge wind tunnel, which has an air speed of 240 miles per hour in its working section, has opened the way for a new program of research and testing.

Already several small dirigible models have been tested for drag characteristics; a larger model of the projected Goodyear Zeppelin, which is to be different in shape from the Zeppelin now under construction, has been tested as part of the inter-allied research program of the Akron Lighter-Than-Air Institute.

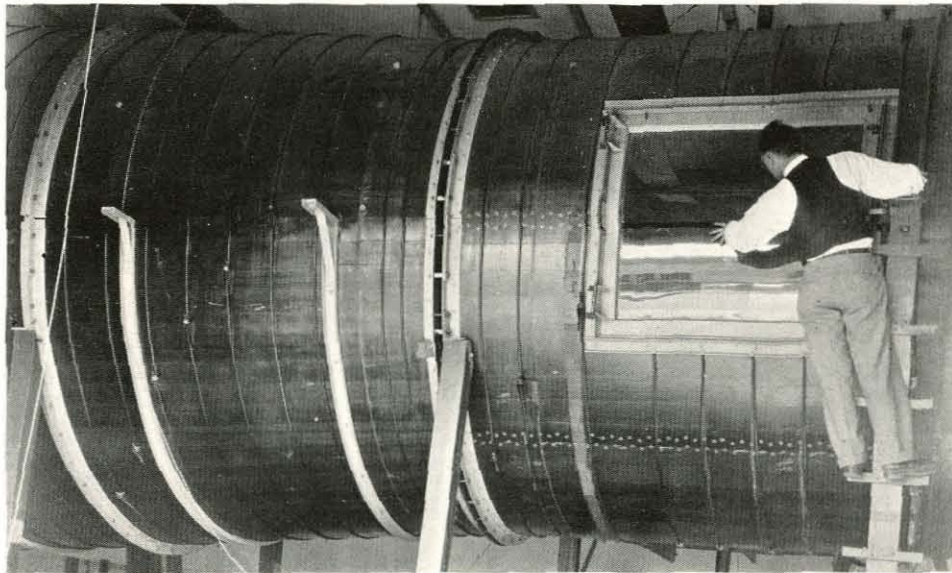
Courses have been given in theoretical aero and hydrodynamics, motor design, propeller theory, etc., by Dr. Clark B. Millikan and Dr. A. L. Klein, assisted by several men of



Professor von Kármán

the graduate school. A course in advanced airplane design has again been given this year, with the assistance of the Douglas Aircraft Company, and Mr. Raymond, assistant chief engineer. The testing facilities of the laboratory have been greatly enhanced with the addition of several new balances, redesigned, but similar to the original automatic balance which was designed here.

Of great interest has been a series of eleven o'clock lectures given by Professor Theodor von Karman, director of the school. A variety of subjects, varying from the most theoretical to the ordinary considerations of protection against corrosion, have been discussed in the Wednesday afternoon Aeronautics Seminar. These seminars are attended not only by the staff and students of the graduate school, but by seniors in aeronautics, as well as physicists, and mechanical and civil engineers.



ADMINISTRATION

MECHANICAL ENGINEERING

This year the Mechanical Engineering department, under the supervision of Professor Robert L. Daugherty, pursued the teaching of the theoretical aspects of hydraulics and mechanical engineering as applied to practical work. Professor Daugherty is one of the most prominent men in this field, having been president of the American Society of Mechanical Engineers for the last three years and vice-president for two years previous to that.

As it is the aim of the Mechanical Engineering department to produce men who are very well trained in both theory and practice, it is the custom of the department to make arrangements frequently for work to be done out of school in power plants and other places. In accordance with this policy, arrangements have been made for tests of a small water plant at the mouth of the San Gabriel which is to be purchased by the city from the Edison



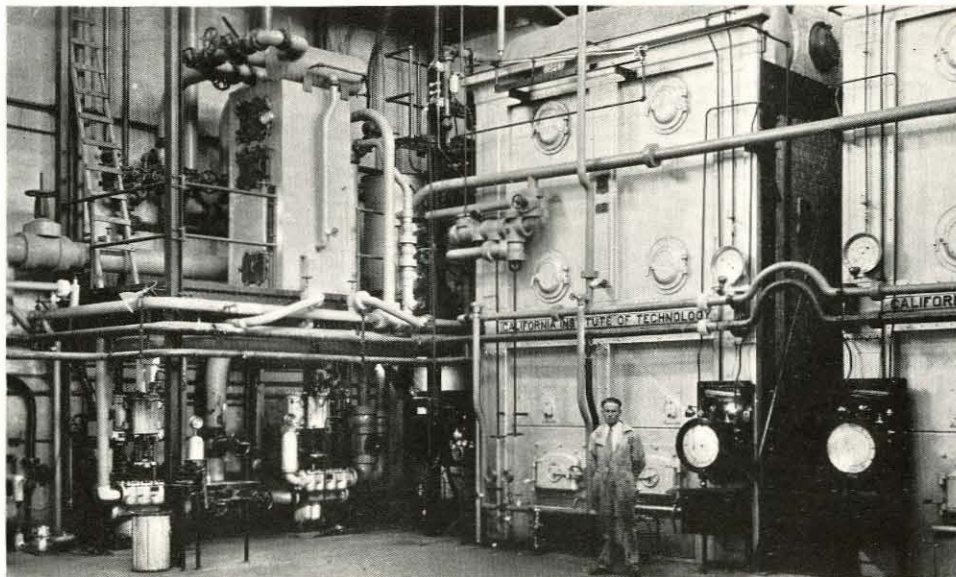
Professor Robert L. Daugherty

Company, in addition to tests of the Pasadena power plant.

Just recently Professor Robert T. Knapp returned from a fifteen months' study of hydraulic laboratories of Europe. He is at present connected with Dr. A. E. Raymond of the Aeronautical department in research work, the problems of aeronautics being largely problems in hydraulics. Professor Howard Clapp is at present

concerned with research in metallography.

The Mechanical Engineering department conducts a very comprehensive group of courses, including hydraulics, thermodynamics, machine design, heat engineering, and refrigeration and the applications of these to industry and the production and utilization of power. This last statement is very important, and the department realizing this, has gradually built up very complete laboratories so that the Tech graduate will secure thorough training.



ADMINISTRATION

HUMANITIES

The value of cultural training to the scientist and engineer has long been recognized by the Executive Council of the Institute. With the completion of the Dabney Hall of the Humanities in 1928 the division became equipped to properly develop the intellect of the students on a broad basis, as contrasted with the usual narrow viewpoint of most technical men. The courses that are offered students cover a wide variety of subjects in addition to the basic ones in English and History.

The department of English under the direction of Professor C. K. Judy offers the students courses covering the complete outline of English literature. In the senior year the study of contemporary letters in several optional courses is undertaken. In addition an elective course in debating is offered under the direction of Mr. Ray C. Untereiner. One of the most valuable courses is that of journalism given under the direction of Professor MacMinn.

The department of History under the direction of Dr. William B. Munro, formerly head of the division of History and Government



Professor C. K. Judy

at Harvard, presents the students with an adequate historical background. Dr. Macarthur and Dr. Thomson teach the freshmen Ancient and Medieval history, while Professor Harvey assists Dr. Munro in teaching Modern history. Dr. Max Farrand, director of the Huntington Library, is an associate in history at the Institute.

One of the departments that has increased in strength since the opening of Dabney Hall is that of economics, headed by Mr. Graham A. Laing, assisted by Mr. Horace N. Gilbert, Mr. P. S. Fogg, and Mr. Ray Untereiner.

For the special needs of science students' courses in French and German are given by Dr. John A. Macarthur. Under the direction of Prof. Theodore G. Soares, formerly of the University of Chicago, courses are offered in Philosophy and Ethics, while Mr. Untereiner teaches an introductory course in sociology.

The Humanities division is aided by its association with the Huntington Library, because scholars doing research there are associated with the Institute, notably Dr. Max Farrand, Dr. Hardin Craig, and Mr. Harvey.

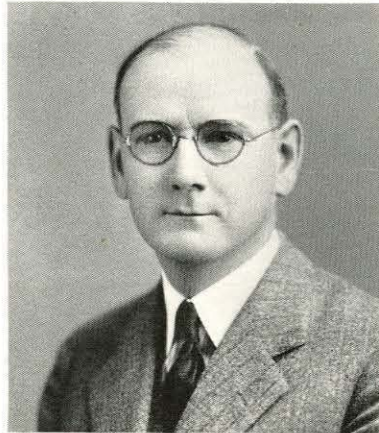


F A C U L T Y

CIVIL ENGINEERING

More and more opportunities are to be had in the Civil Engineering department for research in structural engineering, irrigation, power development, highway engineering, dam construction and the like due to the increased facilities of the department, and the capability of the staff of instructors. Professor Franklin Thomas, head of the Civil Engineering department, is Vice-Chairman of the Board of Directors of the Metropolitan Water District of Southern California and is also a director of the American Society of Civil Engineers. Professor Romeo R. Martel, professor of Structural Engineering, is especially interested in the effect of earthquakes on structures.

This year the department has as a visiting professor, Prof. Eugene Kalman, one of the outstanding mathematical engineers of the country. Professor Kalman's specialty is the



Professor Franklin Thomas

analysis of forces and stresses in masonry dams.

Problems of interest are undertaken by members of the department. For example, two men are working on the determination of the rate and character of percolation of water which takes place in gravel deposits such as constitute the beds of California streams. The quantity of percolation under different conditions is determined by the use of

huge metal tanks filled with sand and gravel. The direction of flow is noted by color observations in a tank having a glass wall.

Some of the men are working on determination of the stresses in dams and structures, by microscopic studies of celluloid models accurately made to scale. Another student is noting the effect of the introduction of various adulterants upon the strength and other properties of concrete mixtures. Extensive work is also carried on in tests of construction materials.



ADMINISTRATION

ELECTRICAL ENGINEERING

Under the direction of Professor Royal W. Sorensen, the Electrical Engineering department has grown in size and importance to one of the most complete in the United States. Since the establishment of the famous million volt laboratory in 1924, the equipment for both research and ordinary testing work is complete in every detail and now offers the best opportunity for the solution of practical and theoretical problems confronting the engineer.

Professor Sorensen is ably assisted by Dr. Mackeown and Mr. Maxstadt, and this year the addition of Mr. Fred Lindvall has ably strengthened the teaching staff. Besides these men there are also a number of men engaged in various research problems, and working towards their doctor's degree in Electrical Engineering. This year's research was carried on in the design of dynamo electric machinery, problems of the oil industry, insulators, thyratron tubes, and their applications, the application



Professor Royal W. Sorensen

of vacuum tube apparatus to high frequency currents, vacuum switch problems, neon signs and high voltage X-rays. It can be clearly seen from these studies that research at the Institute is quite broad and complete, offering interesting work in practically every field of electricity.

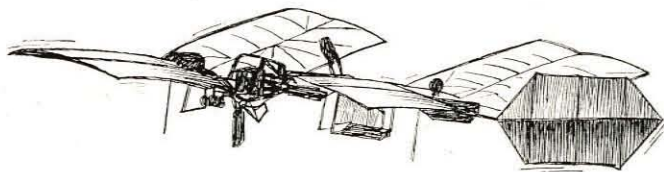
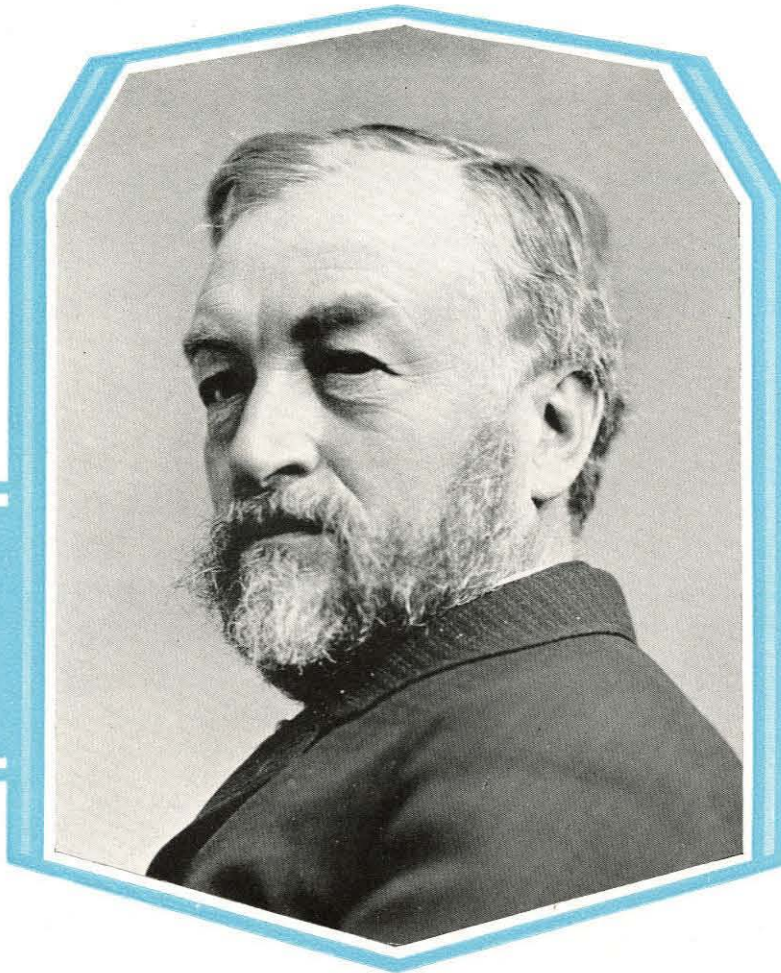
The courses offered to the undergraduates are very basic in character, intending only to give the student

an understanding of direct and alternating current theory and its relation to testing in the laboratory. This includes wiring up of motors, generators, and transformers for various operations and an intimate knowledge of practical testing.

New equipment is being added continually and this year two magnetic oscillographs were purchased. This equipment, together with the cathode ray oscillograph already in use, makes the apparatus for analyzing wave forms very complete.







SAMUEL PIERPONT LANGLEY

Scientist, former Director of the Smithsonian Institution. Accomplished powered flight, though a large man carrying plane similar to his models crashed due to a defect in its launching apparatus.

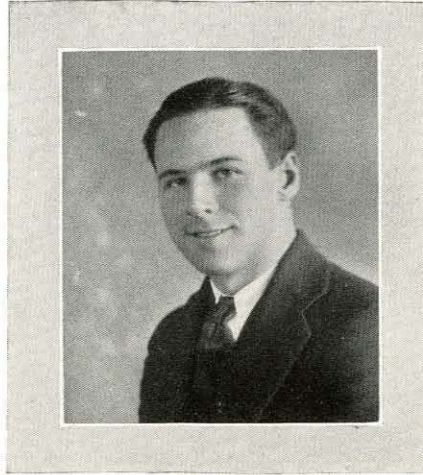


S T U D E N T

EXECUTIVE

The Executive committee is the governing body of the associated students and as such carries on the student administrative work. In addition the Executive committee meets once a month with the Faculty Committee on Student Relations, where student-faculty problems are frankly discussed in order to secure a clearer understanding of the problems. The committee controls expenditures, grants athletic awards and fills many appointive offices.

Following the resignation of Charles Dickerman, Robert M. Lehman was elected president of the Associated Students early in October, but during his absence as a member of the housing committee, Oscar M. Newby as vice-president directed the affairs of the student body. The administrative functions were performed by Emery Buffum, as secretary, Jeff Wineland, treasurer, William D. Hacker, Jr., athletic manager, and Charles Stipp, publicity manager.



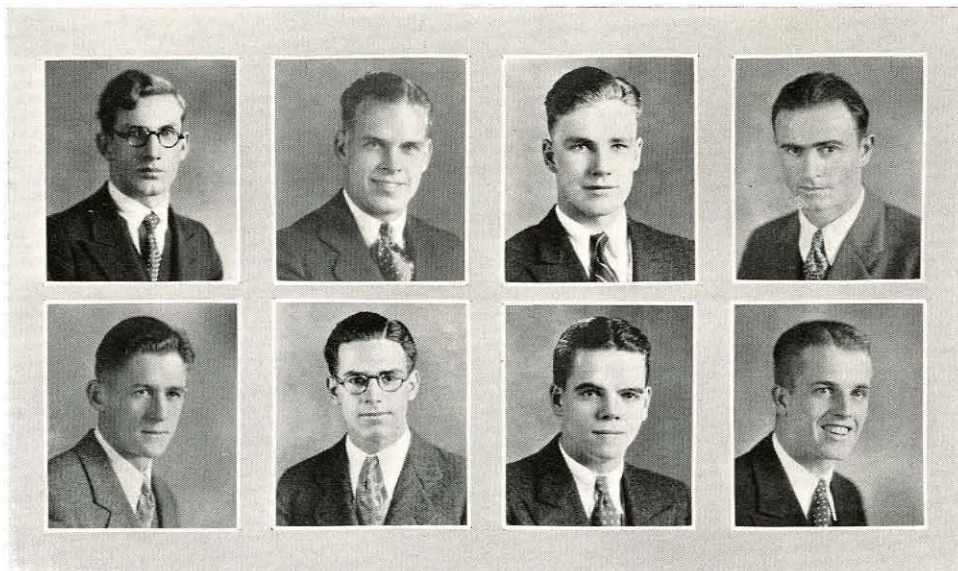
Robert M. Lehman

COMMITTEE

Under the direction of the Executive committee a new constitution was adopted which fitted the needs of the associated students better than the old one. A different secondary award was decided in place of second team and scrub letters. This year the Executive committee invited the editors of the Calif. Tech and the Big T, the yell leader, and the chairman of the N.S.F.A. to attend its meetings and

partake in its discussion. Jeff Wineland, as treasurer, and George Langsner set up a new system of books for the student body that provided a positive control for the student body expenditures.

Under the direction of the Executive Committee student body social functions were both improved and increased in number. Early in November a student body dance was held in the Lounge, and practically the entire student body attended the opening night of "The Torch Song," at the El Capitan theatre in Hollywood.



Buffum
Watson

Dickerman
Stipp

Newby
Hacker

Wineland
Freeman

ADMINISTRATION

BOARD OF

"A Tech man's honor is the Tech man's pride." The Honor System is the most cherished and revered tradition of Tech men. We take pride in it as we do in nothing else. The system trains and builds up the characteristic traits that mark the Tech man and lift him above the weaker ones that may be prone to follow temptation or to give up in the search for the highest goals that may be attained.

The fact that a man can safely leave possessions anywhere on the campus gives rise to a feeling of brotherhood that is rarely found to such a degree as at this Institute. And, due to the faculty's persistent observance of the Honor System in granting privileges to the students aside from the absence of their members during student examinations, there is built up in Tech men a strong will power to resist temptations, a greater understanding of his



Oscar M. Newby

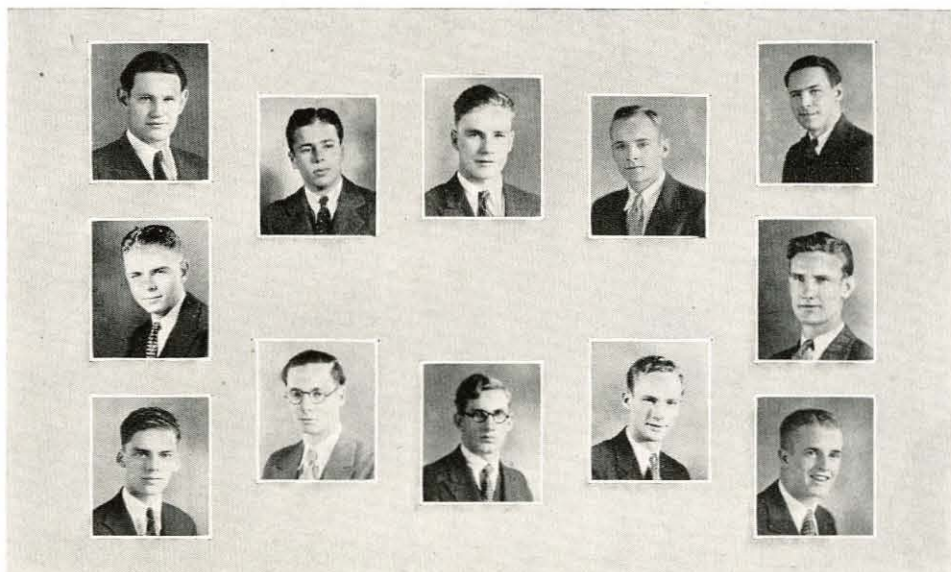
CONTROL

own responsibilities and possibilities, and a strong perseverance to carry out his aims and ideals.

The Board of Control is the student group which fosters and supervises the enforcement of the Honor System. The duties of the Board of Control consist of investigating any breaches in the Code of Honor and of creating a spirit which will permeate Tech life throughout and will tend to prevent

the occurrence of "Conduct unbecoming of an engineer or a gentleman." Its power to act in major cases is limited to making a recommendation to the faculty, but it is expected that much weight is given to the decisions of the Board.

The Board is composed of ten voting members: four seniors, one of whom is the president of the student body; three juniors, two sophomores, and one freshman. The vice-president of the student body is acting chairman, without vote.



Dickey
Carey
Chambers

Scholtz
Kircher

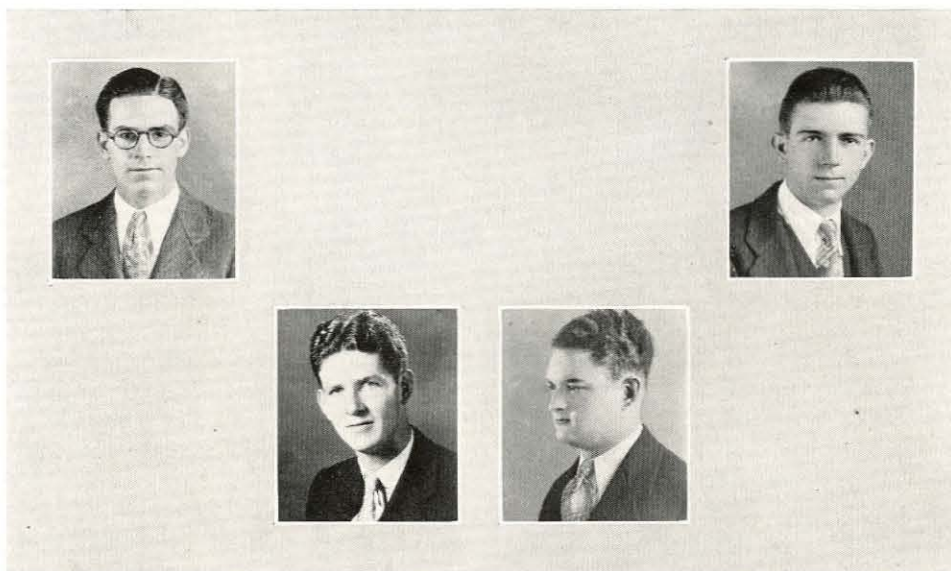
Newby
Buffum

Morgan
Welch

Lehman
Labory
Freeman

STUDENT

PUBLICITY COMMITTEE



Stipp

Bradburn

Grafman

Ferguson

One of the most important groups of men working on the campus for the benefit of the student body is the Publicity Committee. These men have the thankless job of keeping the activities and events at Tech favorably in the eyes of the general public, a job which takes a lot of time and effort. It is through their efforts that the present developments are placed in the hands of the local papers, other college papers, and many periodicals throughout the country.

During the last year the work has very ably been carried on by a committee composed of Charles Stipp, chairman, L. L. Ferguson, A. Jack Grafman, and James Bradburn. Of this staff the chairman is elected by the Student Body, while the remainder are appointed by the chairman.

Perhaps the largest amount of work for the Publicity Committee came during football season, when football programs were edited and published. The writing of the contents, the procuring of names and pictures of all contestants, the selling of advertising space and

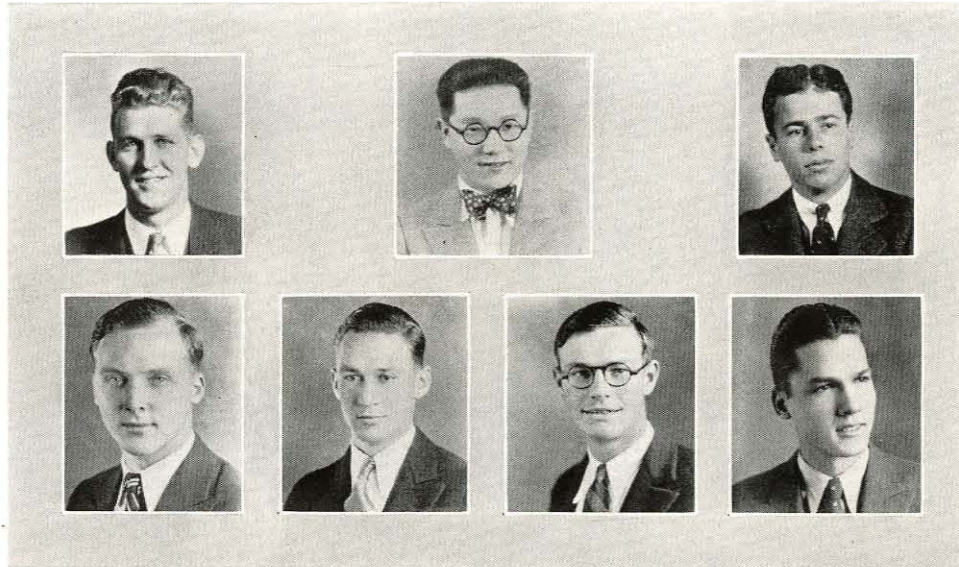
the final selling of the books at games took a great deal of time and effort. This year the football programs were of as high a calibre as any printed in the West. Also during football season came the task of placing posters advertising the coming games in the store windows of Pasadena and surrounding cities.

In the second term this year, the Publicity Committee had the special task of advertising the Tech theatre benefit party, which was held February 2, at the El Capitan Theatre. To accomplish this a great many letters were mailed to friends of the college, and posters were placed in prominent shop windows in Pasadena as well as in many schools.

The third term brought more important work to be done by the committee, the publicity for Exhibit Day. Although the Exhibit Day chairman has his own publicity committee it is up to the Publicity staff of the Student Body to co-operate. A great many letters and posters were mailed to all the high schools in Southern California, thus helping in making Exhibit day a success.

ADMINISTRATION

N. S. F. A.



Schoeller
Goodman

Pratt

Nagashi

Coryell

Scholtz
Arnerich

The National Student Federation of America is the official federation of student bodies of colleges and universities in the United States. It holds an annual congress composed of delegates from member colleges who attend to discuss questions pertaining to students' interest, and consider student problems. Howard Nagashi, Chairman of the Cal Tech committee, attended the sixth annual congress held at Atlanta, Georgia, during Christmas vacation.

The N. S. F. A. also conducts surveys through the local committees on problems of student interest, and finds consensus of American student opinion by taking polls on various national and international issues. A news service is conducted and news from colleges and universities all over the nation is sent to papers weekly. The N. S. F. A. negotiates and obtains special rates and reductions on traveling expenses to foreign countries, conducts tours of selected students through Europe, and makes arrangements for international debates.

The N. S. F. A. committee is Cal Tech's official representative in the National Student Federation of America, of which the Associated Students of the California Institute of Technology is a member. The members of the committee are selected by the Executive Committee and are composed of the President of the Associated Students, the editor of the "California Tech," and other students whose interest and ability in student activities qualify them to carry on the work of the committee.

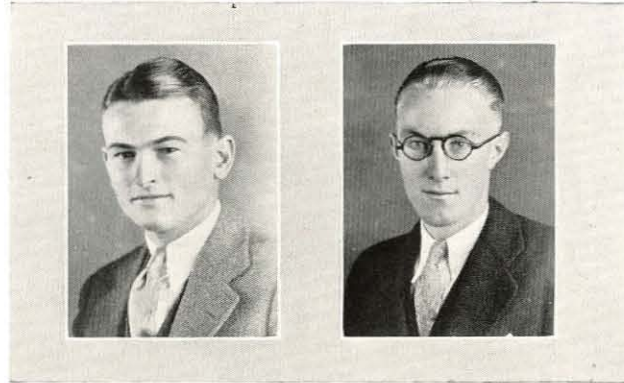
The local N. S. F. A. committee serves as liaison between the national headquarters and the Cal Tech student body in carrying out the program of federation and solving local campus problems by correspondence and by conducting surveys. The Cal Tech committee is in charge of the news map in the Dabney Hall, has conducted surveys on the question of Christmas vacation, student activities, and is co-operating with the Undergraduate Housing committee.





CLASSES

C L A S S E S



Smits

Amann

SENIOR CLASS

The class of 1931 started its career at Tech under the leadership of Aubrey Horn, who was appointed class chairman by the Executive Committee. At the end of the first term class elections were held resulting in the election of Aubrey Horn, Jack McGarry, Jack Hatcher, Arthur Brooks, Lester Frick, and Don Prentice, respectively, president, vice-president, secretary, treasurer, athletic manager, and member of the Board of Control. The class gave the traditional Freshman Student Body dance at the end of the first term at the Hotel Vista del Arroyo, and since its valiant efforts in the sack contest were unsuccessful it gave the Rodeo Dance in Culbertson Hall.

For the sophomore year the class chose Bob Lehman, president, and John Mehl, Howard Smits, Arthur Brooks, Lester Frick, Lee Pratt, Oscar Newby, Herbert Ingham, and Jack McGarry as the other officers. The class did its best to make the class of '32 good Tech men by holding the frosh to observance of the freshman rules and by giving certain rebellious members baths in the liquid air pond. Hostilities ceased when the frosh gave the Rodeo

dance in Culbertson Hall as a penalty for having lost the pushball contest held between halves of the U. C. L. A.-Tech football game. Then followed the Sophomore Student Body dance at the end of the second term, a dance conceded to have been one of the best of its kind in years.

Returning to school as upper-classmen the members of the class elected Howard Smits, Ray Labory, Emery Buffum, Arthur Brooks, Walter Dickey, Bob Lehman, Oscar Newby, and George Rice, respectively president, vice-president, secretary, treasurer, athletic manager, and members of the Board of Control. The class of '31 was the first class to have a dance in Dabney Lounge, and this was such a success that it was followed by an afternoon tea-dance held in co-operation with the class of 1930. As a grand finale to the year came the Junior-Senior prom at the Annandale Country Club.

For its senior year, the class chose Howard Smits, president; Jack Amann, vice-president; Emery Buffum, secretary; Arthur Brooks, treasurer, and Walter Dickey, Ray Labory, and

C L A S S E S



Buffum

Brooks

Charles Kircher representatives on the Board of Control. Under the able leadership of these men the class won the dance offered by the Big T to the class selling the largest percentage of its members' annuals. Then, as a conclusion to the social life of the class as an undergraduate body, came the Junior-Senior prom, a perfect dance which will always live in the memories of those attending.

The class of 1931 has always ranked high scholastically. Five of its members, Lucas Alden, Carter Gregory, Robert Jacobs, Lawrence Kinsler, and Raymond Peterson were given travel prizes because of their outstanding qualifications in scholarship. At the beginning of the senior year these men were honored by election to associate membership in Sigma Xi. Ten members of the class achieved the honor of initiation into Tau Beta Pi during their junior year and eleven more were initiated at the beginning of the senior year.

The class made an excellent start in extra curricular activities by turning out unusually large numbers for the various freshmen teams, and for activities of all sorts. The class has

demonstrated its continued willingness and ability to support activities of all sorts by furnishing a considerable number of men prominent in athletics, and in work on the Big T, and the California Tech. Members of the class took an important part as players on California Tech's championship football team, led by Captain "Iron Man" Dickey.

The class of '31 can justly claim distinction for its progressive and co-operative spirit. Members of the class have co-operated with the faculty in efforts for a new gymnasium and in the design and furnishing of the new undergraduate living houses.

The class has added to the list of worthwhile traditions that of a school ring. This ring features the seal of the Institute, the beaver and the "T" on Mt. Wilson in its design. The ring was chosen by the class as its senior emblem and has been adopted by the executive committee and the classes of '32 and '33. It has caused a great deal of favorable comment from alumni and friends of the school and is well on its way to a place among the major traditions of Tech.

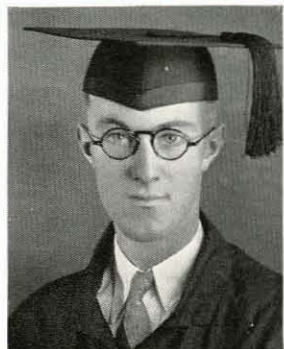


LUCAS A. ALDEN
Tau Beta Pi, Sigma Xi Associate

Of Montrose
Physics

Glendale High School
Entered 1927

Tennis Squad (1); Letter (2); Track (3, 4); Travel Prize (3); Blacker Scholar (3).



JACK H. AMANN

Tau Beta Pi, Pi Kappa Delta, Honor Key

Of Pasadena

Los Angeles High School

Electrical Engineering

Entered 1927

A. I. E. E. (4); Big "T" (3, 4); Circulation Manager (3); Associate Editor (4); Varsity Debate (2, 3, 4); Manager (4); Glee Club, Manager (3, 4); "Y" Handbook (4); "Miles Glorious" (4); Class Vice-President (4); Junior-Senior Prom Chairman (4); California Tech, Advertising Manager (4); Drama Club (4).

MAYNARD M. ANDERSON

Tau Beta Pi

Of San Diego San Diego
High School
Civil Engineering Entered 1927

A. S. C. E. (4); Senior Announcement Committee (4); Track (1, 2, 3, 4).

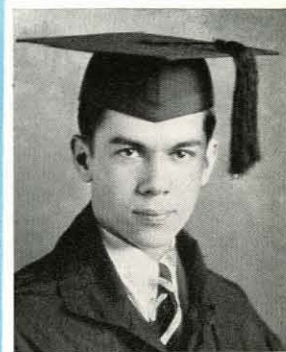
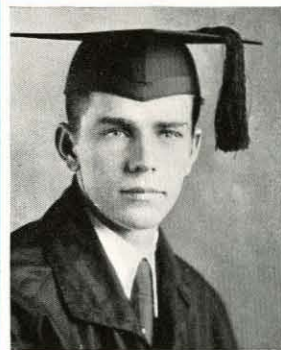
WILLIAM FREDERICK ARNDT

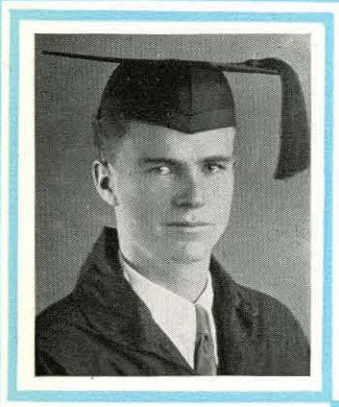
Pi Alpha Tau

Of Hollywood
Electrical Engineering

Hollywood High School
Entered 1926

Baseball (1); Wrestling (1, 2).





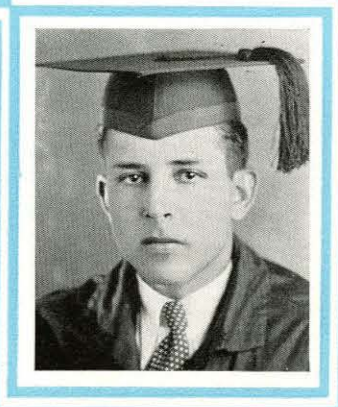
REA ANDREW AXLINE

Phi Kappa Tau, Nu Chapter

Of Albion, Idaho
Mechanical Engineering

Transfer from U. S. Naval Academy
Entered 1929

Ditch Day Committee (4); A. S. M. E. (4).



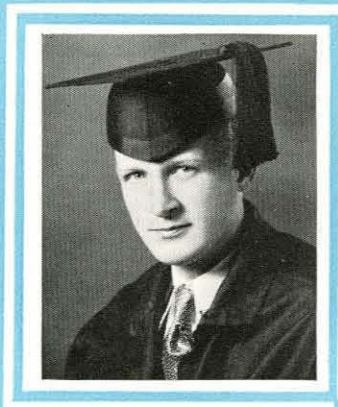
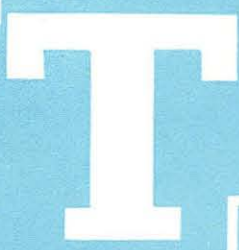
THOMAS WILLIAM BELL

Pi Alpha Tau

Of Whittier
Mechanical Engineering

Whittier High School
Entered 1927

A. S. M. E. (4); Baseball (1, 2, 3, 4); California
Tech (3).



JOHN CARTER BIGGERS

Of Alhambra Alhambra High
School

Civil Engineering Entered 1927

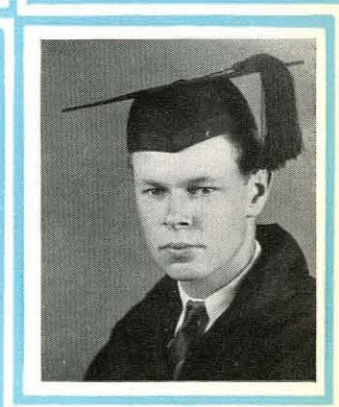
A. S. C. E. (4).

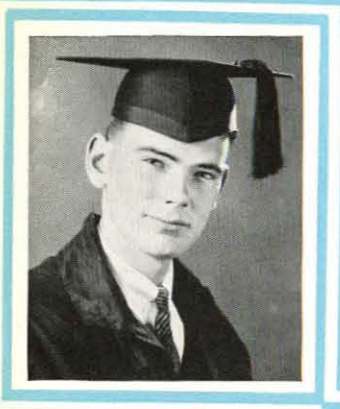
LAWRENCE W. BOLLES

Of Santa Ana
Geology

Santa Ana High School
Entered 1927

Band (1, 2); Orchestra (3, 4); Chem Club (1, 2); Geology Club
(3, 4); Secretary-Treasurer (4).



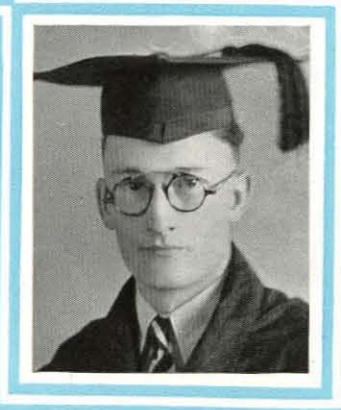


PERRY MATTISON BOOTHE

Of Los Angeles
Civil Engineering

Los Angeles Polytechnic High School
Entered 1927

A. S. C. E. (3, 4); Treasurer (4); Aero Club (2, 3); Senior Ring Committee (3).

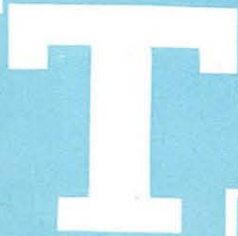


JOHN L. BOVEE, Jr.

Of Anaheim
Mechanical Engineering

Anaheim Union High
Entered 1927 School

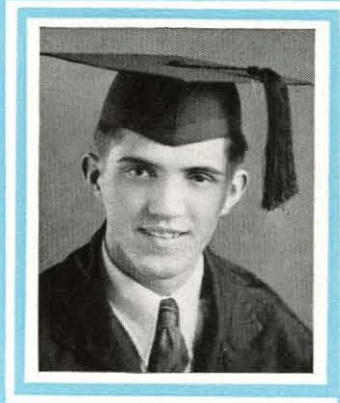
A. S. M. E. (3, 4); Secretary-Treasurer (4).



GEORGE HENRY BOWEN

Of Los Angeles Manual
Arts High
School

Chemical Engineering Entered 1927
Chem Club (3).

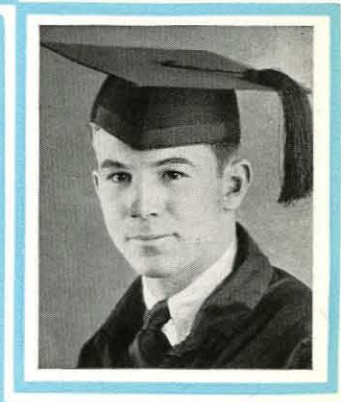


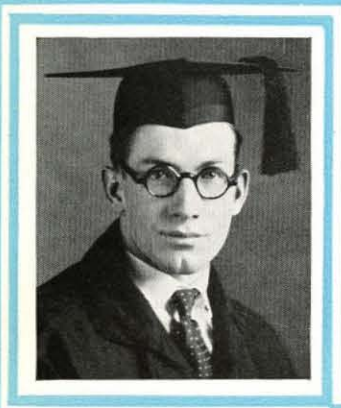
ARTHUR C. BROOKS

Gnome Club, Honor Key

Of Balboa Santa Ana High School
Civil Engineering Entered 1927

Varsity Club (3, 4); A. S. C. E. (4); Football (1, 2); Letter, (3);
Basketball (1); Class Treasurer (1, 2, 3, 4); Y. M. C. A. (1, 2, 3, 4);
Cabinet (1, 2); Vice-President (3); Treasurer (4); Chairman Finance
Committee (4); Manager Intramural Athletics (4); Big T (4).





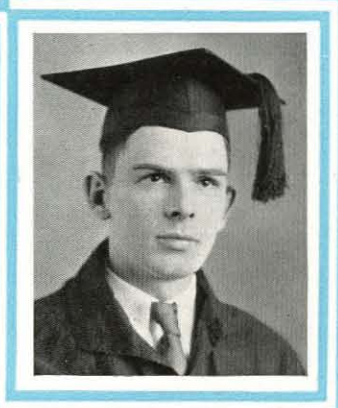
CHARLES EMERY BUFFUM

Gamma Sigma; Honor Key

Of Long Beach
Physics

Long Beach Polytechnic High School
Entered 1927

A. I. E. E. (4); Secretary, Associated Students (4); Class Secretary (3, 4);
Basketball Manager (2, 3, 4); Football (1, 2, 3); Letter (4); Executive Com-
mittee (4); Ditch Day Committee (4); Varsity Club (4); Faculty Student
Relations Committee (4); Honor Key (4).



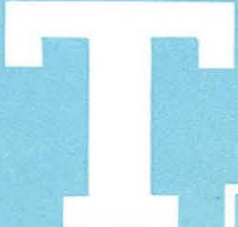
GEORGE LELAND BUSSEY

Of Los Angeles

Los Angeles Polytechnic High
School

Mechanical Engineering
Football (1); Track (1).

Entered 1926



GLENN CHAMBERLAIN

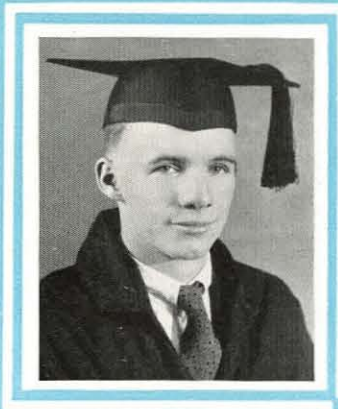
Pi Kappa Delta

Of San Diego San Diego
State
College

Electrical Engineering Entered 1928

Basketball (3); Varsity Debate (3, 4, 5);

Glee Club (3, 5); A. I. E. E. (4, 5).



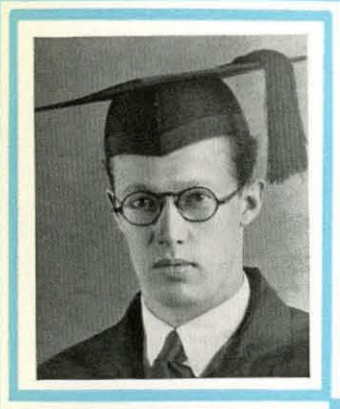
WILLIAM M. COGEN

Of Chicago
Geology

Manual Arts High School
Entered 1926

Geology Club (3, 4), Secretary-Treasurer (4); Chem Club (1);
Glee Club (3, 4); Basketball (1, 2); Letter (3, 4); Varsity Club (3,
4); Vice-President (4); Exhibit Day Committee (4).





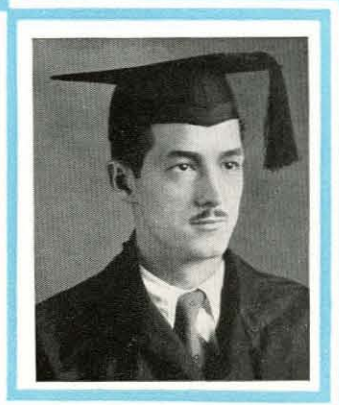
ROBERT PREWITT COLEMAN

Pi Alpha Tau

Of Pasadena
Physics

Pasadena High School
Entered 1927

Tennis (1, 2); Advertising Manager "Y" Handbook (2).



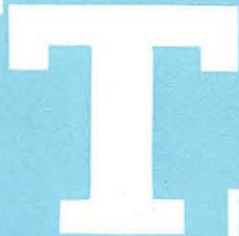
NELSON M. CORDES

Sigma Alpha Pi

Of Los Angeles
Mechanical Engineering

Belmont High School
Entered 1926

A. S. M. E. (4); Football (1); Basketball (3); Baseball (3, 4).



ALBERT T. CRAWFORD

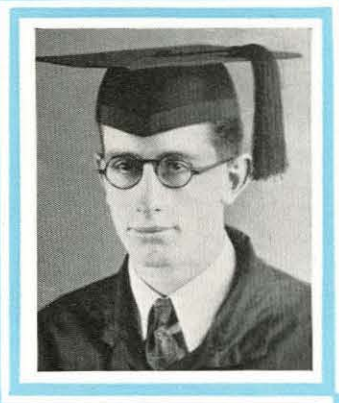
Gnome Club

Of Tustin

Tustin
Union
High School
Entered 1927

Chemical Engineering

Varsity Club (2, 3, 4); Football (1), Letter (2, 3, 4); Basketball (1); Baseball (1); Exchange Editor, California Tech (4).



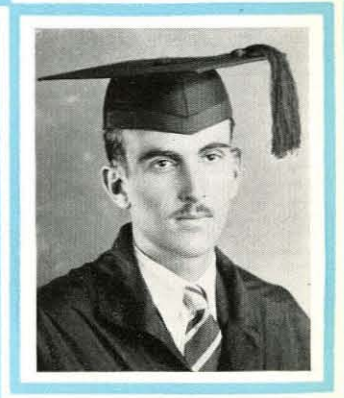
EDWARD B. CROSSMAN

Pharos

Of Santa Monica
Geology

Santa Monica High School
Entered 1927

Chem Club (1, 2); Rifle Club (3, 4); Geology Club (3, 4).



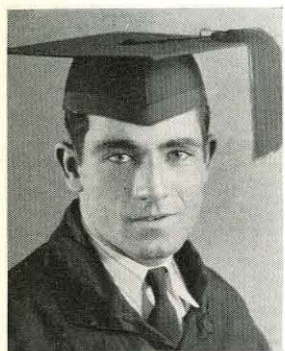
SAMUEL CLARE EASTMAN

Sigma Alpha Pi

Of Los Angeles
Mechanical Engineering

Brooklyn Manual Training High School
Entered 1927

Varsity Club (2, 3, 4); Frosh-Soph Dance Committee (2); Junior-Senior Prom Committee (4); Athletic Council (4); Football (1), Letter (3, 4); Track (1), Letter (2, 3).



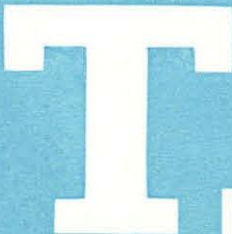
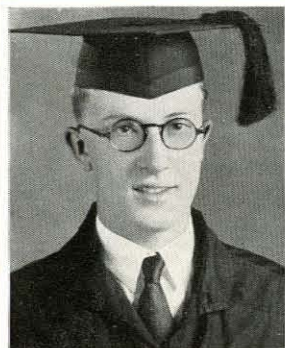
W. FERDINAND EBERZ

Of Altadena

Los Angeles Polytechnic High School

Chemical Engineering Entered 1927

Chem Club Treasurer (4); Freshman and Sophomore scholarships.



LAWRENCE L. FERGUSON

*Pi Kappa Delta, Pi Alpha
Tau, Honor Key*

Of Glendale Van Nuys
High School
Mechanical Engineering Entered 1927

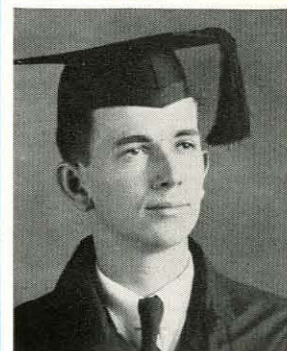
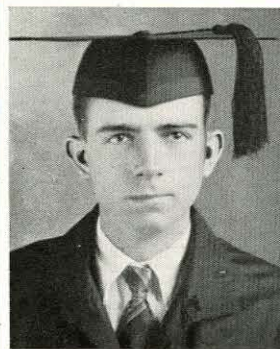
California Tech (2, 3, 4), Business Manager (4); A. S. M. E. (4); Glee Club (3, 4); Y. M. C. A. (1, 2, 3, 4), Vice-President (4); Publicity Committee (4); Cosmopolitan Club (1, 2, 3); Interfraternity Council (4); Publicity Manager "The Braggart Warrior" (4); Junior-Senior Prom Committee (3); Varsity Debate (2, 3); Chairman Senior Announcement Committee (4); Aero Club (1, 2, 3, 4); Student Houses Committee (4); Gym Publicity Committee (3, 4); Press Club (3, 4), Vice-President (4); Exhibit Day Committee (2, 3); The Big "T" (3, 4), Business Manager (3), Editor (4); Faculty Student Relations Committee (4); Honor Key (3, 4).

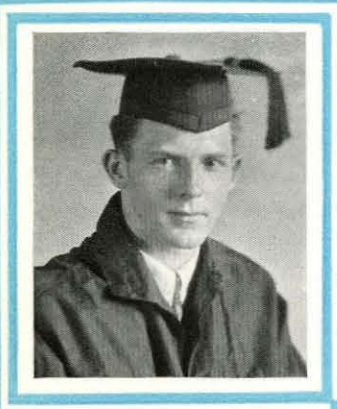
THEODORE R. FOLSOM

Pharos

Of San Diego San Diego High School
Physics Entered 1927

Cross Country (1); Basketball Manager (1); Football Manager (2).





FRANK H. FORD

Of Porterville
Mechanical Engineering

San Pedro High School
Entered 1924

A. S. M. E. (2, 4), Secretary (3), President (4); Swimming (2).

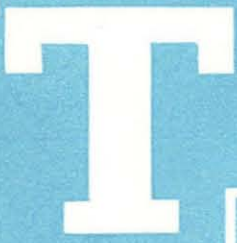


CALVIN B. FRYE

Of San Diego
Mechanical Engineering

San Diego High School
Entered 1926

Track (1, 2).



JOHN E. GIRARD

*Tau Beta Pi, Alpha Lambda,
Loyola Chapter*

Of Los Angeles Loyola High
Schooland
College
Electrical Engineering Entered 1927

A. I. E. E. (4); Football (1).

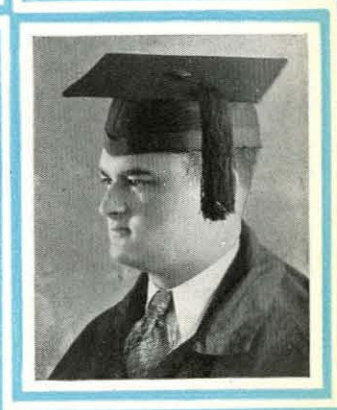


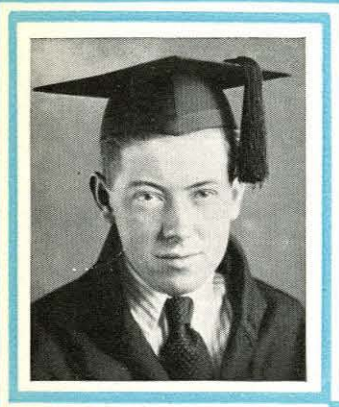
A. JACK GRAFMAN

Honor Key

Of Hollywood Hollywood High School
Aeronautical Engineering Entered 1927

Aero Club (1, 2, 3, 4), President (3, 4); A. S. M. E. (3, 4); Track
Manager (1, 4); Football Manager (2, 3); Cross Country Manager
(4); Wrestling (1, 2, 4); Big "T" (1, 2, 3, 4), Advertising Staff (1); Cali-
fornia Tech Staff (1, 2, 3, 4); Sport Editor (3), Associate Editor (4); N. S.
F. A. Committee (3); Y. M. C. A. News Board (3, 4); Gym Publicity Com-
mittee (4); Chairman Aeronautical Exhibit (3, 4); Publicity Committee (4);
Press Club (2, 3, 4).



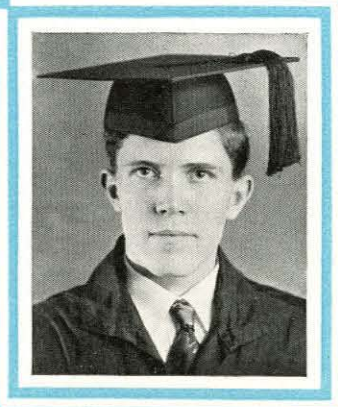


EDWIN FRANCIS GREEN

Of Los Angeles
Mechanical Engineering

Belmont High School
Entered 1927

A. S. M. E. (4); Varsity Club (2, 3, 4); Baseball (1), Letter (2, 3, 4).



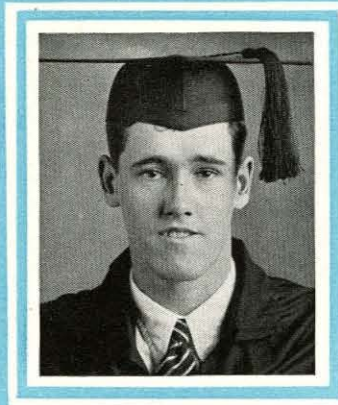
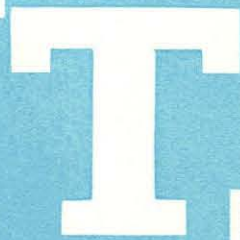
LOWELL FORREST GREEN

Tau Beta Pi, Sigma Xi Associate

Of Santa Ana
Physics

Santa Barbara High School
Entered 1926

Alumni Scholarship (1); Tech Staff (1); Rifle Team (1); Big "T" (1); Cross Country (3); Travel Prize (3); Blacker Scholar (3).



**CARTER
H. GREGORY**

*Tau Beta Pi
Sigma Xi Associate*

Of San Marino
Pasadena High School
Physics Entered 1927

Basketball (1); Blacker Scholar (2, 3);
Travel Prize (3).

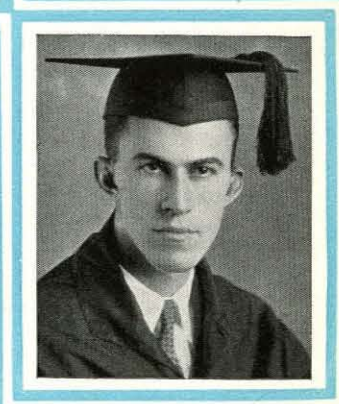
ROBERT HARDY GRIFFIN

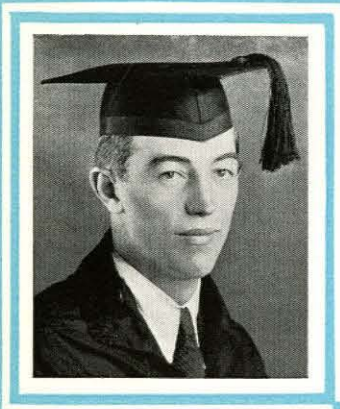
Tau Beta Pi

Of San Diego
Civil Engineering

Grossmont Union High School
Entered 1927

A. S. C. E. (4); Gift Committee (4); Track (1, 2, 3); Senior Ed.
Big "T" (4).





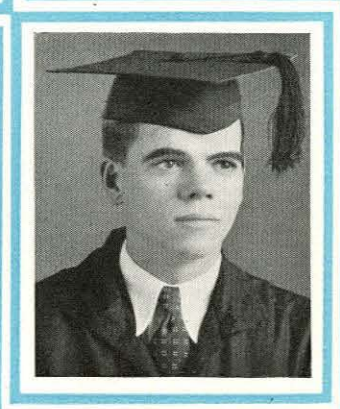
NORMAN ROBERT GUNDERSON

Pi Alpha Tau, Tau Beta Pi

Of Randsburg, Colo.
Chemical Engineering

Antelope Valley High School
Entered 1927

Chem Club (4); Football (1, 2, 3), Letter (4); Swimming (1, 2, 3); Varsity Club (4).



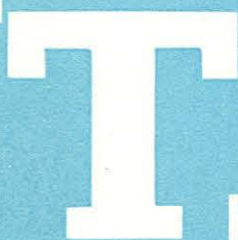
WILLIAM DILLON HACKER, JR.

Gnome Club, Honor Key

Of San Francisco
Aeronautical Engineering

Los Angeles High School
Entered 1926

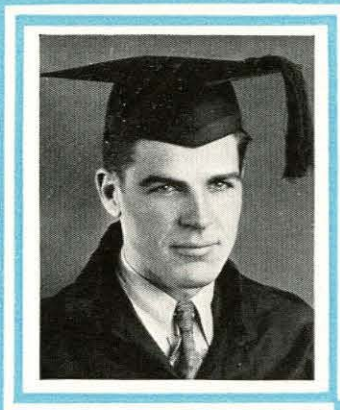
A. S. M. E. (4); Athletic Manager (4); Football Manager (1, 2, 3, 4); Gym Publicity Committee (3); California Tech (1, 2); Big "T" (1, 2); Baseball (1, 3); Class Athletic Manager (1); Executive Committee (4); Faculty Student Relations Committee (4); Junior-Senior Prom Committee (3, 4); Glee Club (4); Athletic Council (4); Exhibit Day Committee (3); Honor Key (4).



MARVIN W. HALL

Of Los Angeles Lincoln High School
Electrical Engineering
Entered 1927

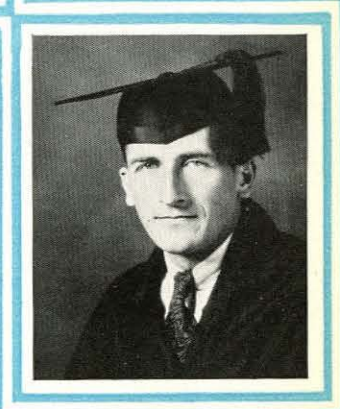
A. I. E. E. (4); Baseball (1, 2, 3); Football (3, 4); California Tech (3).

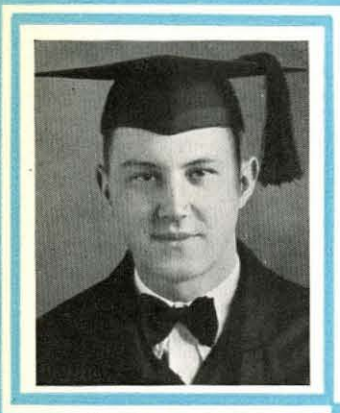


WINTON C. HOCH

Of Storm Lake, Iowa Santa Monica High School
Physics
Entered 1925

Band (1, 2); Glee Club (2, 4, 5); Swimming Team (1, 4), Manager (1); Rifle Team (1); Orchestra (2); Cross Country (2); Aero Club (2, 3); Cosmo Club (3); Chem Club (3); Fencing Club (3).



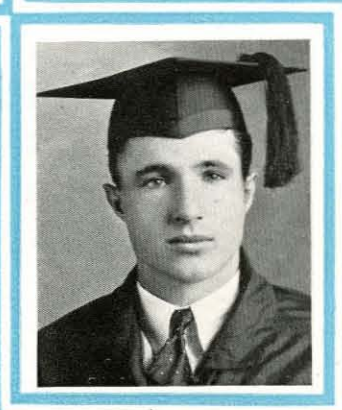


EMMETTE R. HOLMAN

Of Pasadena
Chemical Engineering

Crane Tech High School
Entered 1929

Chem Club (3, 4); Y. M. C. A. (3, 4); Glee Club (3, 4); Band (3, 4);
Orchestra (3, 4).

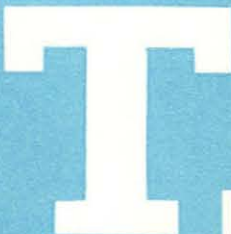


BENJAMIN HOLZMAN

Of Los Angeles
Geology

Los Angeles High School
Entered 1927

Varsity Club (3, 4); Geology Club (4); Track
(1, 2), Letter (3, 4); Football (1).

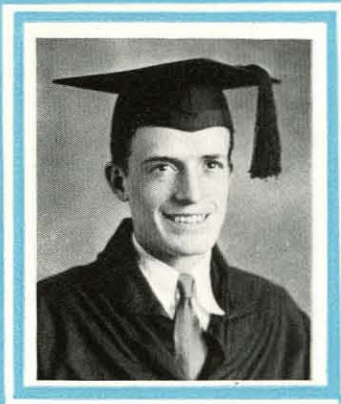


**HERBERT
S. INGHAM**

Gnome Club, Pi Kappa Delta

Of Los Angeles Los Angeles
High School
Mechanical Entered 1927
Engineering

A. S. M. E. (4); Football Man-
ager (1); Big "T" (1); Frosh De-
bate (1); Varsity Debate (2, 3); Track
(1, 2); Board of Control (2); Throopers
(3, 4); Assistant Yell Leader (3).

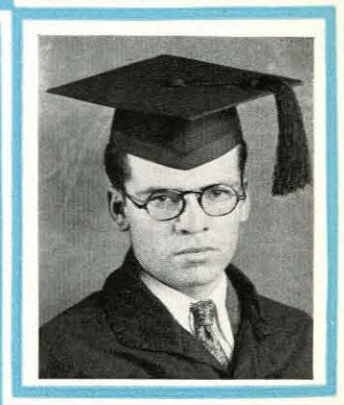


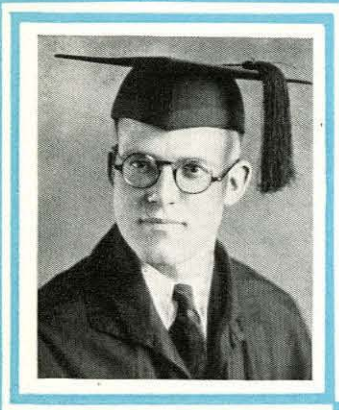
ROBERT JACOBS

Tau Beta Pi, Sigma Xi Associate, Pi Kappa Delta

Of Santa Monica Harvard Military Academy
Physics Entered 1927

Debate (1); Varsity Debate (2); Blacker Scholar (2, 3); Travel
Prize (3).





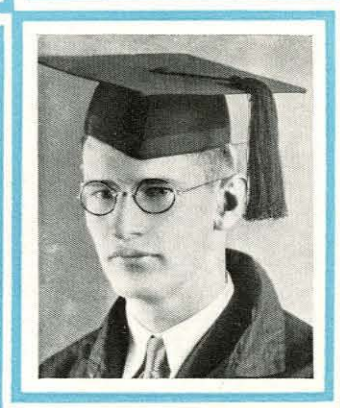
DUROC ALBERT JECKER

Pi Kappa Delta

Of Fontana
Chemical Engineering

Manual Arts High School
Entered 1927

Drama Club (3, 4); Press Club (4); Debate (1); Varsity (2); California Tech Staff (1, 2, 3, 4); Copy Ed. (3); Exchange Ed. (4); Big "T" Staff (1, 2, 3); "Menechmae," "Mercadet," "Blanco Posnet," "Oedipus Rex," Business Manager "Braggart Warrior."

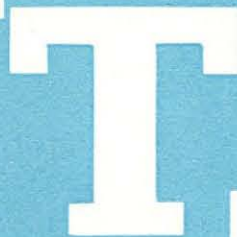


BYRON B. JOHNSON

Of St. Louis, Mo.
Civil Engineering

John Burroughs High School
Entered 1928

Basketball (2, 3, 4); Glee Club (2, 3).



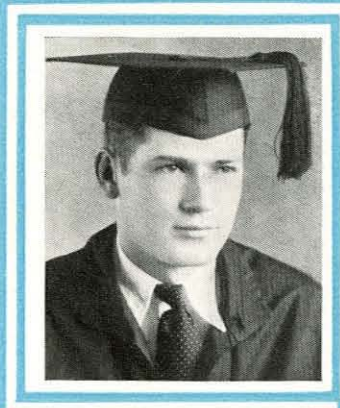
**THEODORE
WALDEMAR JURLING**

Sigma Alpha Pi

Of Los Angeles Belmont High
School

Mechanical Entered 1927
Engineering

A. S. M. E. (4); Track (1, 2, 3);
Baseball (1); Cross Country (1, 2).



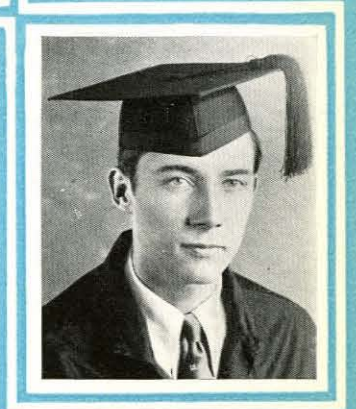
EDWARD CHESTER KEACHIE

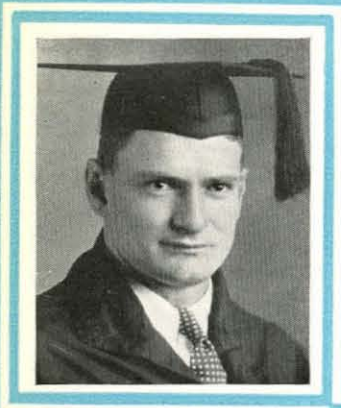
Gamma Sigma

Of Bridgewater, Mass.
Electrical Engineering

Bridgewater High School
Entered 1928

A. I. E. E. (4); Drama Club (2, 3, 4), President (4); "Oedipus Rex" (2); "Blanco Posnet" (3); "Wappin' Wharf" (3); California Tech (4); Garden Party Committee (3).





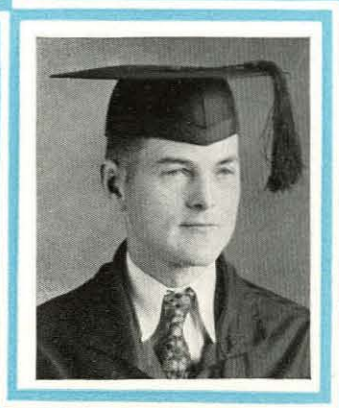
JAMES H. KEELEY

Sigma Alpha Pi

Of El Monte
Mechanical Engineering

El Monte High School
Entered 1925

Varsity Club (3, 4); Football (1), Letter (3, 4); Tennis (1, 2, 3, 4).



EDWARD S. KINNEY, JR.

Pharos

Of San Diego
Electrical Engineering

San Diego High School
Entered 1927

A. I. E. E. (4); Radio Club (2, 4); Football (1, 2);
Conger Contest (1).

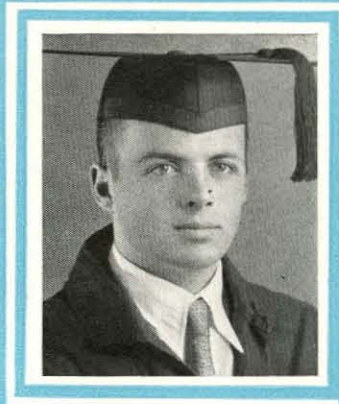


**LAWRENCE
EDWARD KINSLER**

*Tau Beta Pi,
Sigma Xi Associate*

Of Los Angeles Los Angeles
High School
Physics Entered 1927

Football (1); Track (1, 2, 3, 4);
Travel Prize (3); Blacker Scholar
(2, 3).

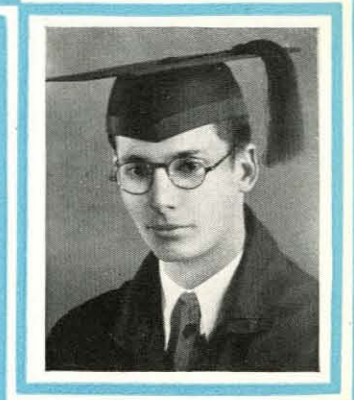


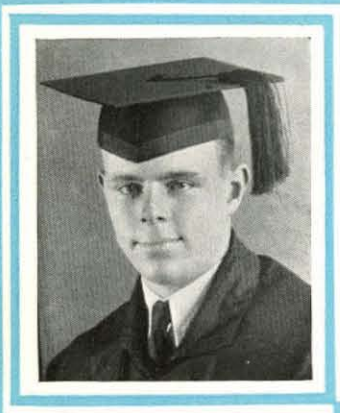
CHARLES E. KIRCHER, JR.

Pharos, Tau Beta Pi, Pi Kappa Delta

Of El Paso, Texas El Paso High School
Chemical Engineering Entered 1927

Chem Club (4); Tennis (1); Varsity Debate (2, 3, 4); Manager (3),
Assistant Manager (4); Y. M. C. A. Cabinet (3, 4); Business Manager
Y Handbook (4); Board of Control (4); Secretary S. C. I. P. S. C. (3);
Manager "The Braggart Warrior" (4); Junior-Senior Prom Committee (4).



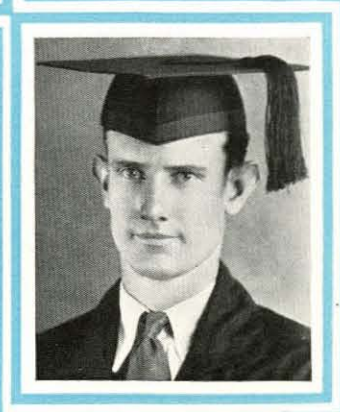


EDWIN KUYKENDALL

Of South Pasadena
Chemical Engineering

South Pasadena High School
Entered 1927

Football (2); Track (1, 3).



RAYMOND F. LABORY

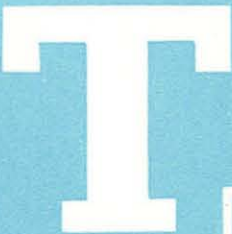
Gnome Club, Honor Key

Of Los Angeles

Manual Arts High School

Mechanical Engineering Entered 1927

Football (1); Basketball (1, 2, 3, 4); Baseball (1);
Y. M. C. A. Cabinet (2, 3, 4); Class Vice-
President (3); Band (1, 2, 3, 4); Big "T"
Advertising Manager (4); Board of Con-
trol (4); News Editor, California Tech
(4); Glee Club (4).



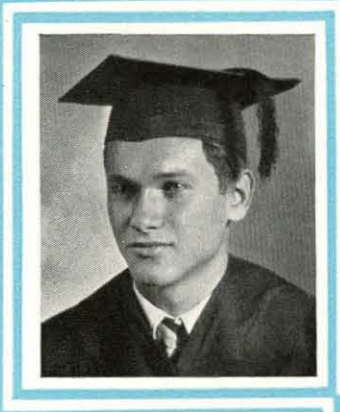
GEORGE LANGSNER

Honor Key

Of Ontario Chaffey Union
High School

Civil Engi- Entered 1925
neering

Press Club (2, 3, 4, 5), Secre-
tary (3), Vice-President (4); Cosmo
Club (1, 2, 3), Vice-President (3);
A. S. C. E. (2, 3, 4, 5), Secretary (4);
California Tech (1, 2, 3), Assistant Man-
aging Editor (2), Managing Editor (3); Big
"T" (2, 3, 4, 5), Associate Editor (3), Assistant
Editor (5), Assistant Publicity Manager (2) Publicity
Manager (4); Executive Committee (4); Football (2);
Baseball Manager (1); Throopers (4); Exhibit Day Com-
mittee (4); Faculty Student Relations Committee (4).

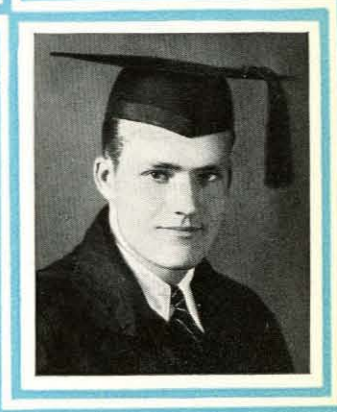


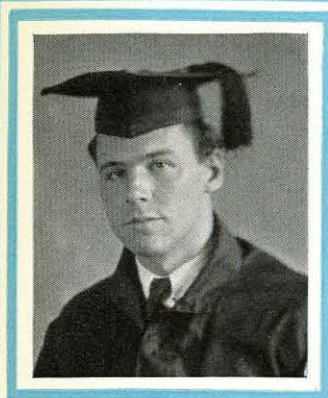
LAVERNE LEEPER

Pharos, Tau Beta Pi

Of San Bernardino San Bernardino High School
Civil Engineering Entered 1927

A. S. C. E. (3, 4), Vice-President (4); Football Manager (2, 3);
Senior Ring Committee (3); Senior Gift Committee (4).





ROBERT MARSHALL LEHMAN

Gnome Club, Honor Key

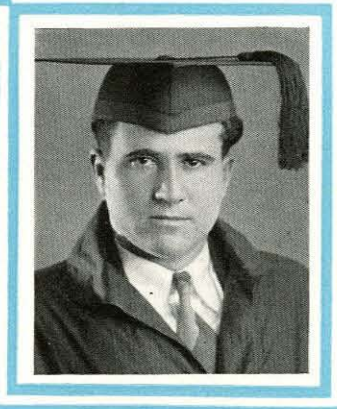
Of Salt Lake City Mercersburg Academy
Aeronautical Engineering Entered 1927

Class President (2); Honor Key (4); Associated Students President (4);
Big "T" (3); Baseball Manager (1, 2, 3); Athletic Council (4); A. S. M. E.
(3, 4); Class Day Committee (4); Aero Club (1, 2, 3, 4); Student Houses
Committee (4); Gym Committee (3); Board of Control (3, 4);
Executive Committee (4); Inter-Fraternity Council (4); Faculty
Student Relations Committee (4).

ALEX H. LEVINE

Of Long Beach Long Beach High School
Mathematics Entered 1927

Dorm Club (1); Chem Club (4); Rifle Team (2);
Track (2, 3, 4); Swimming (4).



CHARLES K. LEWIS

Pharos

Of Santa Ana Tustin High
School

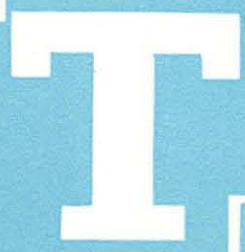
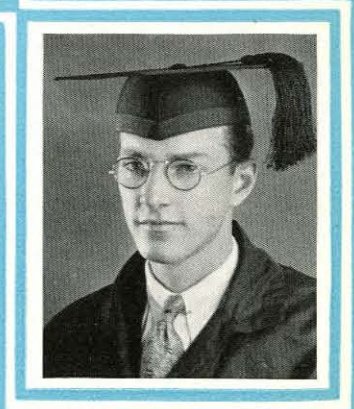
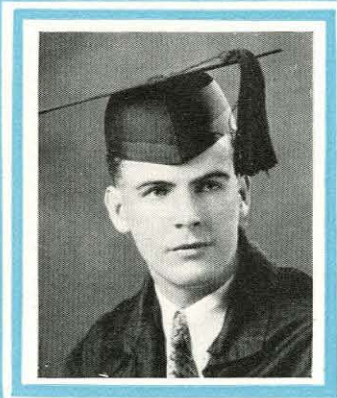
Civil Engi- Entered 1927
neering

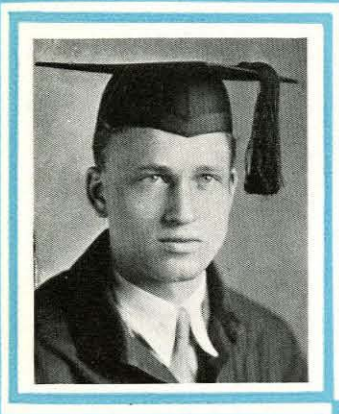
A. S. C. E. (3), President (4);
Band (1, 2); California Tech (1, 2),
News Editor (2); Dorm Club (1); Press
Club (2, 3, 4), Treasurer (3), President
(4); Senior-Frosh Dance Committee (4);
Gym Publicity Committee (3), Chairman (4);
A. S. B. Dance Committee (4).

GEORGE E. LEWIS

Of Pasadena Pasadena High School
Electrical Engineering Entered 1927

A. I. E. E. (4); Rifle Club (2, 4); Cross Country (1); Track (1, 2);
Rifle Team (1, 2).





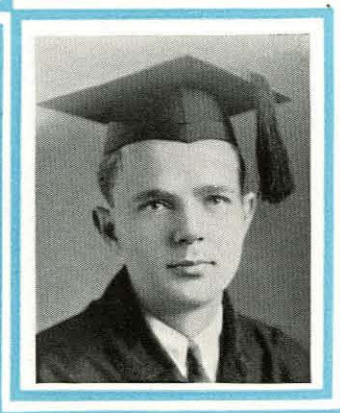
GEORGE EDWARD LIEDHOLM

Gnome Club

Of Long Beach
Chemical Engineering

Long Beach Polytechnic High School
Entered 1926

Varsity Club (2, 3, 4), Secretary (3); Glee Club Accompanist (2); Football (1, 2), Letter (3, 4); Basketball (1, 2, 3, 4).

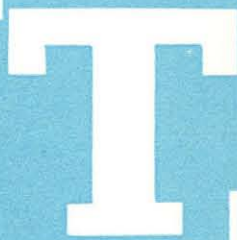


EDMUND J. LONGYEAR, JR.

Of Altadena
Electrical Engineering

Deane School, Santa Barbara
Entered 1929

A. I. E. E. (4); Photo Club (4).

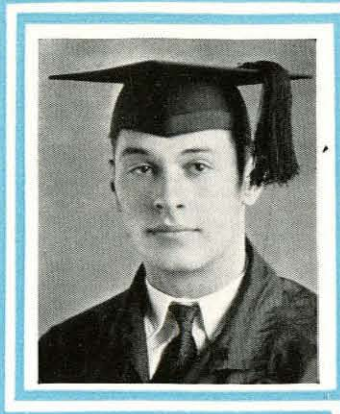


HARRY MATISON

Tau Beta Pi

Of Pasadena Santa Monica
High School

Mathematics Entered 1927



JACK FELBERT McGARRY

Gnome Club

Of Hermosa Beach S. C. Preparatory High School
Mechanical Engineering Entered 1927

A. S. M. E. (4); Dorm Club Vice-President (1); Class Vice-President (1); Board of Control (2); Football (1, 2, 3); Glee Club (1, 2, 3, 4), Manager (2), President (3, 4); Track (1); Band (1, 2); Swimming (4).



JOHN ROBERTSON McMILLAN

Gnome Club, Honor Key

Of Los Angeles
Mechanical Engineering

Transfer from U. C. L. A.
Entered 1928

Varsity Club (3, 4); A. S. M. E. (4); Basketball (2), Letter (4); Baseball (2), Letter (3, 4); Football (3); Throoper President (3, 4); Glee Club Treasurer (4); Exchange Programs (2, 3, 4); Ditch Day Committee (4); California Tech (3, 4), Assistant Business Manager (3).

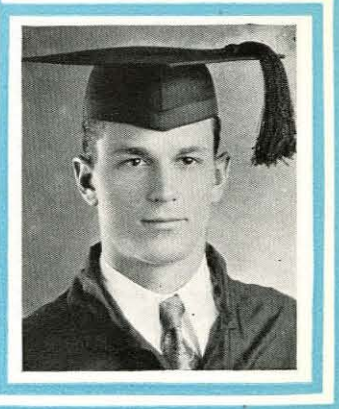
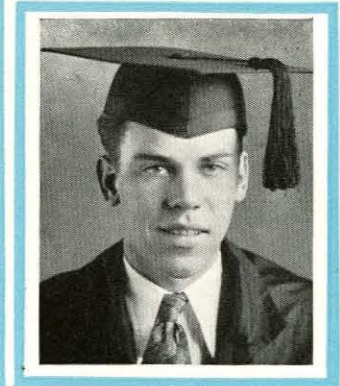
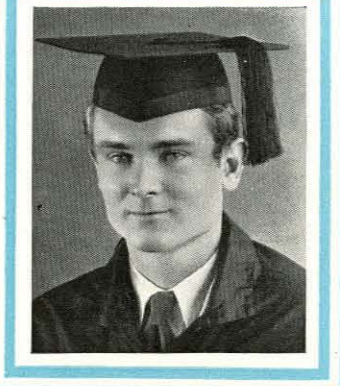
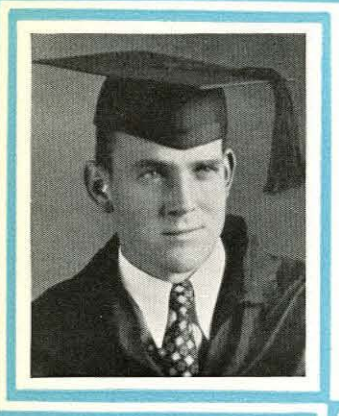
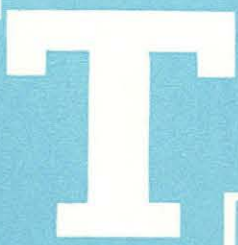
JOHN W. MEHL

Pharos, Tau Beta Pi

Of Upland
Chemistry

Chaffey Union High School
Entered 1927

Throopers (3, 4); Drama Club (1, 2, 3, 4); "Mercadet" (1); "Oedipus Rex" (2); "Blanco Posnet" (2); Band (1, 2), Election Committee (2, 3), Chairman (3); Class Vice-President (2); Student Houses Committee (4); Track (1).



**WILLIAM
STERLING
MERRITHEW**

Of Los Angeles Franklin High
School
Civil Engi- Entered 1927
neering

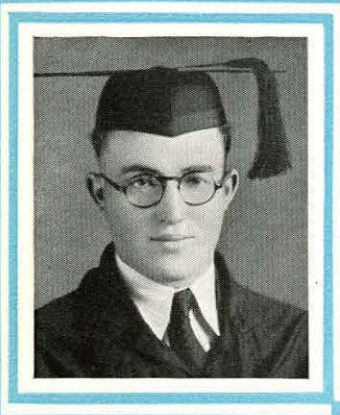
A. S. C. E. (4); Rifle Club (2, 3);
Baseball (1, 2, 3, 4); Chairman
Cap and Gown Committee (4).

ROSS ELLIOTT MORRIS

Tau Beta Pi

Of Hollywood Hollywood High School
Chemical Engineering Entered 1927

Chem Club (4); Varsity Club (3, 4); Football (1, 2, 3, 4), Letter
(3, 4); Baseball (1); Boxing (3); Band (1, 2).



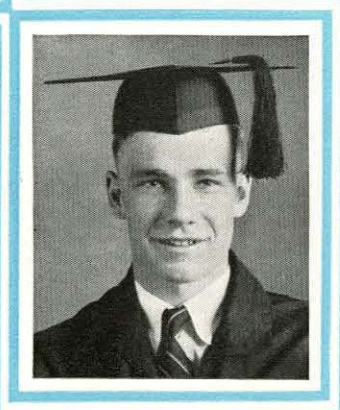
De WOLFE MURDOCK

Pi Alpha Tau

Of Beaver, Utah
Civil Engineering

Santa Ana High School
Entered 1927

A. S. C. E. (4); Varsity Club (4); Football (1, 2, 3), Letter (4); Track Manager (3, 4); California Tech Business Staff (1, 2).



OSCAR NEWBY, JR.

Pharos

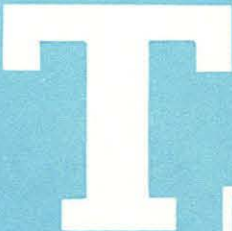
Of Glendale

Glendale High School

Mechanical Engineering

Entered 1927

Varsity Club (3, 4); Y. M. C. A. (1, 2, 3, 4), President (4); Football (1, 2), Letter (3); Basketball (1); Rep. at Large (3); Board of Control (3, 4); Associated Students Vice-President (4); Executive Committee (3, 4); Faculty-Students Relations Committee (3, 4).

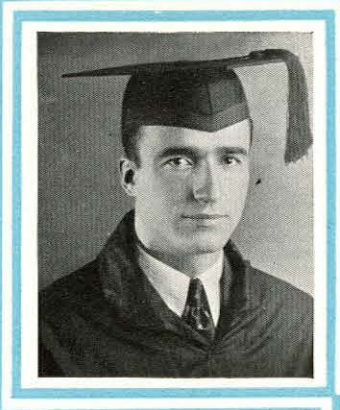


ROBERT M. OAKS

Gnome Club

Of Pasadena Hollywood
High School
Mechanical Entered 1926
Engineering

Varsity Club (3, 4); A. S. M. E. (4); Frosh Chairman (1), President (1); Board of Control (2); Track (1); Basketball (1), Letter (3, 4); Chairman Social Committee (3); Baseball (4); Letter (4).

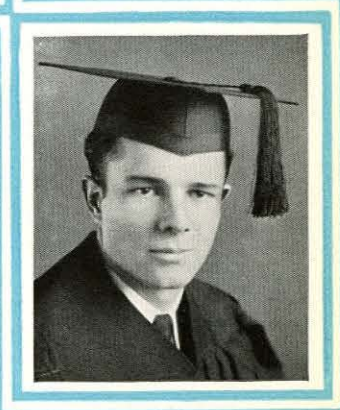


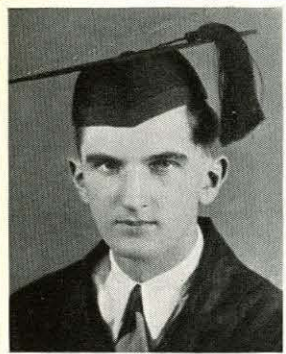
ENNIS GUNNING OLMSTED

Of Glendale
Electrical Engineering

Glendale High School
Entered 1927

A. I. E. E. (4); Band (1, 2); Dorm Club (1); Football (1); Basketball (1).





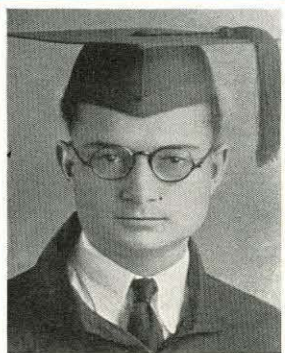
CARL F. J. OVERHAGE

Tau Beta Pi

Of London, England
Physics

Transfer from University of Hamburg
Entered 1928

Tech Staff (3); Cosmo Club (2, 3).



EDWARD STEPHEN PEER

Of Long Beach
Chemistry

Long Beach High School
Entered 1927

Chem Club (2, 4); Dorm Club (1); Track (1, 2, 3, 4);
"Wappin' Wharf" (3).



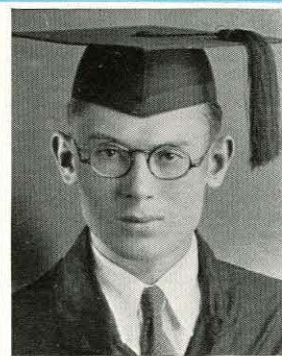
**RAYMOND
ALFRED PETERSON**

*Gamma Sigma, Tau Beta Pi
Sigma Xi Associate*

Of Denver, Colo. East Denver
High School

Geology Entered 1927

Orchestra (1, 2, 3); Blacker
Scholar (2, 3); Travel Prize (3);
Geology Club (3, 4); Announcement
Committee (4).

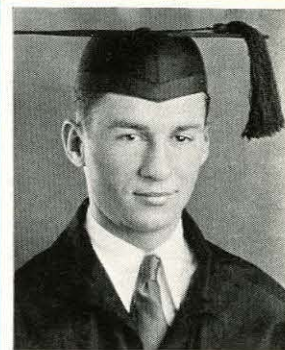


LELAND D. PRATT

Gnome Club, Honor Key

Of Huntington Park Los Angeles Polytechnic High School
Chemical Engineering Entered 1927

Varsity Club (2, 3, 4); Basketball (1), Letter (2, 3, 4), Captain (4);
Tennis (1); Baseball (3, 4); Throopers (3, 4); N. S. F. A. Committee
(3, 4); Y. M. C. A. (3, 4); Class Athletic Manager (2); Honor Key
(3, 4); Ditch Day Chairman (4).





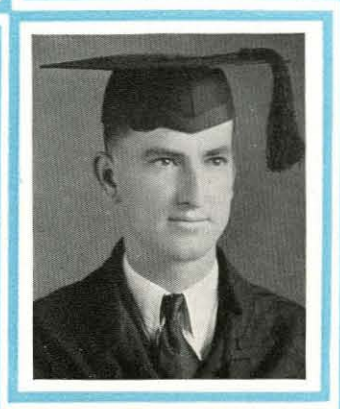
GEORGE S. RICE III

Gnome Club, Honor Key, Tau Beta Pi

Of Alhambra
Mechanical Engineering

Alhambra High School
Entered 1927

A. S. M. E. (3, 4); Varsity Club (3, 4); Aero Club (2, 3); Press Club (4);
Football (1, 2), Letter (3); Swimming (1, 2, 3, 4), Manager (3), Captain
(4); Board of Control (3); Big "T" Sports Editor (4); Honor Key (3,
4); Glee Club (2, 3, 4).

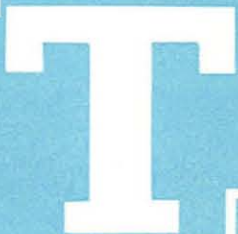


ROGER T. ROBINSON

Of Altadena
Chemical Engineering

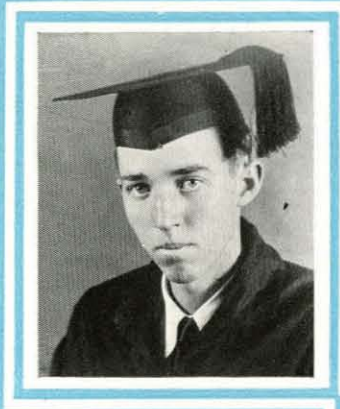
Pomona High School
Entered 1927

Chem Club (2, 3, 4).



JOHN T. SINNETTE, JR.

Of Gainesville, Ga. Gainesville
High School
Chemistry Entered 1929
Chem Club (4).

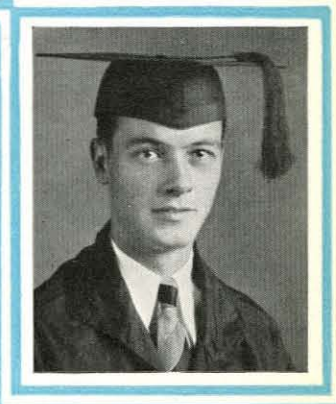


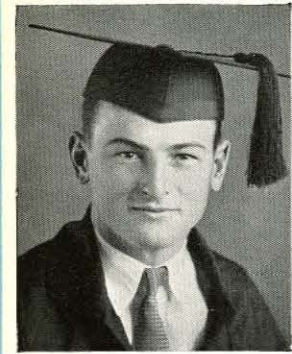
ROBERT GRAVES SMITH

Tau Beta Pi, Honor Key, Gnome Club

Of Riverside Riverside Polytechnic High School
Mechanical Engineering Entered 1927

A. S. M. E. (4); California Tech Editor (4); Big "T" (4); Glee Club
(2, 3, 4); Band (1, 2, 3); Cross Country (1, 2, 3, 4); Track (1, 2, 3, 4).





HOWARD G. SMITS

Gnome Club, Honor Key

Of Glendale
Civil Engineering

Glendale Union High School
Entered 1927

Y. M. C. A.; A. S. C. E. (4); California Tech Columnist (1); Big "T" Staff (2); Class Secretary (2); Boxing Title (1, 2, 3, 4); Glee Club (2, 3); Class President (3, 4); Football Programs (3); Gym Plans and Publicity Committee (3); Publicity Manager Associated Students (3); Swimming (3, 4); Honor Key (3); Executive Committee (3); Faculty-Student Relations Committee (3).

CHARLES K. STIPP

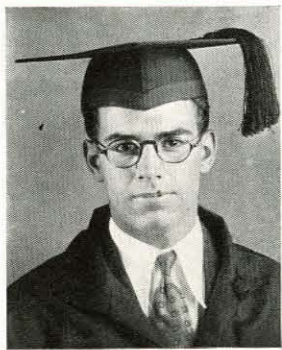
Tau Beta Pi, Honor Key

Of Glendale

Glendale Union High School

Mechanical Engineering Entered 1927

Press Club (3, 4); Faculty-Student Relations Committee (4); Track (1); Band (1, 2); Publicity Committee (3, 4), Manager (4); Executive Committee (4); Big "T" Staff (3, 4), Advertising Manager (3); Circulation Manager (4); Chairman Gym Publicity Committee (3); Chairman Senior Ring Committee (3); Senior Gift Committee (4); Exhibit Day Committee (3, 4); Football Programs (3, 4).



**THOMAS
VERNON TARBET**

Of Pasadena Hollywood
High School

Electrical Entered 1927
Engineering

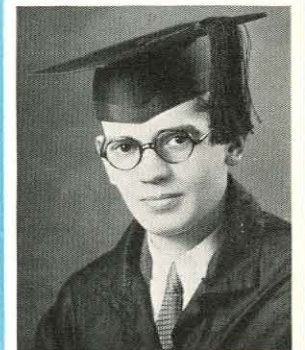
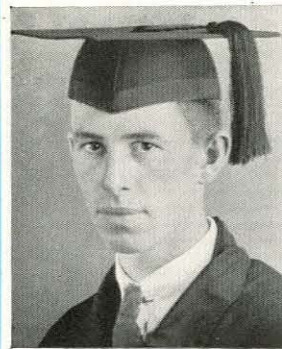
A. I. E. E. (4); Fencing Club (3,4), Secretary (4); Cross Country (1); Basketball (1); Fencing (2, 3, 4); "Bolshevik Empress"; The Braggart Warrior"; Band (1, 2, 3, 4); Glee Club (1, 2, 3, 4); Drama Club (4).

ISADORE THOMPSON

Of Los Angeles
Civil Engineering

Transfer from U. C. L. A.
Entered 1929

A. S. C. E. (4).



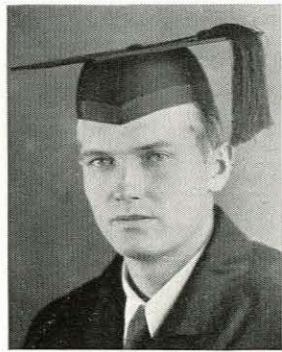


EVERETT G. TROSTEL

Of Santa Ana
Physics.

Santa Ana High School
Entered 1927

Chem Club (1, 2, 3, 4), Vice-President (3), President (3); Football (2, 3).



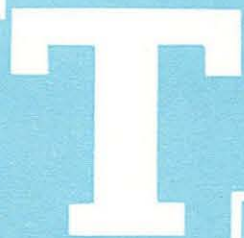
MERRILL DOUGLAS TUCKER

Gnome Club

Of Alhambra
Geology

Alhambra High School
Entered 1926

Throoper (3, 4).



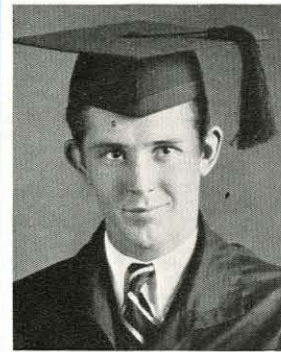
**ALVIN CARL
TUTSCHULTE**

Sigma Alpha Pi

Of Los Angeles Los Angeles
High School

Mechanical Entered 1925
Engineering

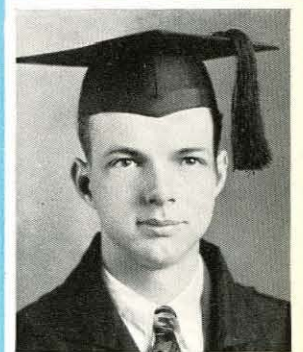
Varsity Club (2, 3, 4); A.S.M.E.
(4); Basketball (1), letter (2); Base-
ball (1, 2, 3); California Tech Staff
(1, 2).

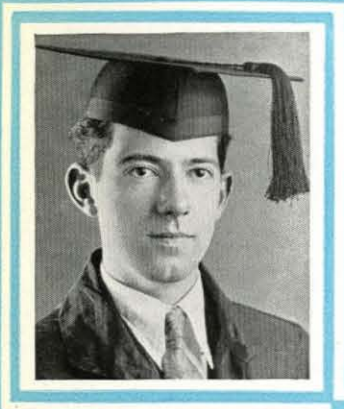


ALFRED S. VOAK

Of Atascadero Margarita Black Union High School
Electrical Entered 1927
Engineering

Drama Club (3, 4), Secretary (3), Vice-President (4); Press Club
(2, 3, 4); California Tech (2, 3, 4); Big "T" (3); "Blanco Posnet";
"The Lady From Andros" (3).



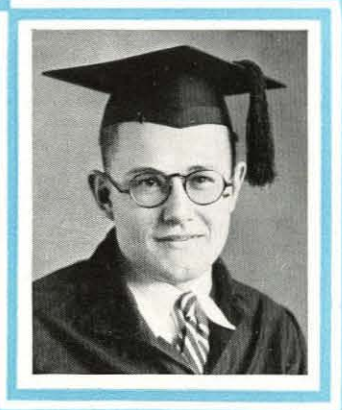


GLENN MILLER WEBB

Of Hastings, Mich.
Physics

Los Angeles High School
Entered 1927

Band (1, 2, 3); Track (1, 2); Tennis (3, 4); Senior Gift Committee (4).

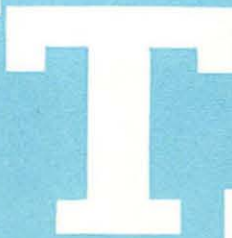


WILLIAM TEXTOR WEST

Of Hollywood
Aeronautical Engineering

Hollywood High School
Entered 1927

A. S. M. E. (4); Aero Club (4); Baseball (1); Rifle Team (1).

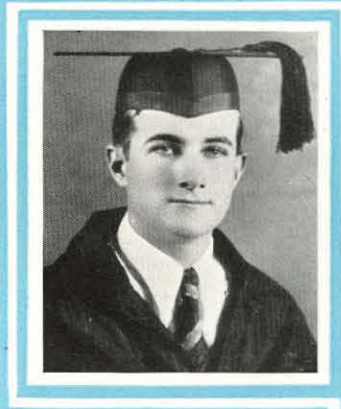


T. ROBERT WHITE

Of Redlands Redlands High School

Chemistry Entered 1927

Chem Club (2, 3, 4); Aero Club (1, 2); Football (1).

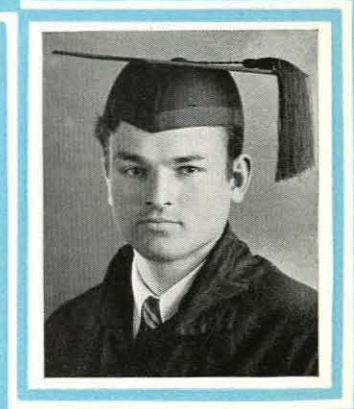


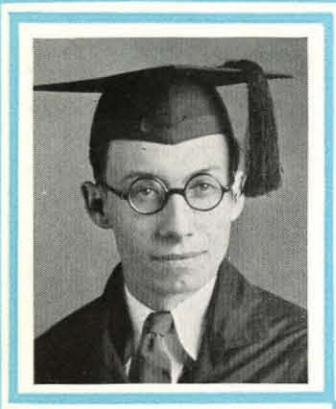
RUBIN R. WIDESS

Of Pasadena
Electrical Engineering

Pasadena High School
Entered 1926

A. I. E. E. (4); Football (1).



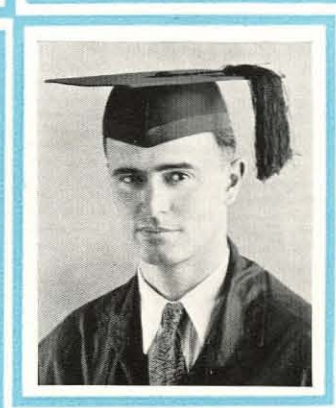


CHARLES ALFRED WILMOT

Of Pasadena
Chemistry

Santa Monica High School
Entered 1924

Chem Club (4); Cross-Country (1, 2).



JEFF A. WINELAND

Gamma Sigma, Tau Beta Pi, Honor Key

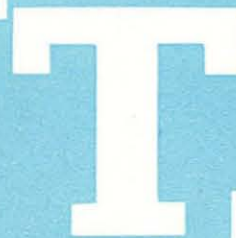
Of Durham

Durham High School

Mechanical Engineering

Entered 1925

A. S. M. E. (4); Varsity Club (2, 3, 4); Football (1); Baseball (1), Letter (2, 3, 4), Captain (4); Treasurer, Associated Students (4); Executive Committee (4), Faculty Student Relations Committee (4).

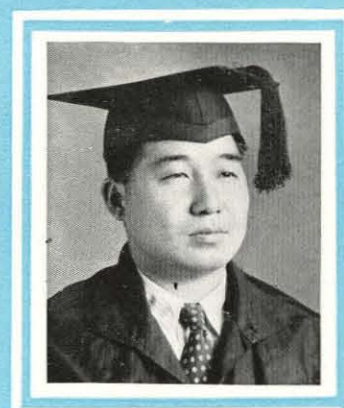


CARL K. YOSHIOKA

Of Los Angeles Los Angeles
High School

Electrical Entered 1928
Engineering

Cosmo Club (2, 3, 4).



DAVID ZABARO

Of Los Angeles
Electrical Engineering

Lincoln High School
Entered 1927

A. I. E. E. (4).



C L A S S E S

CASUALTIES

Homer Althouse
 Richard Andersen
 Vance Arganbright
 Benton Baldwin
 David Barkley
 Richard Barnett
 Charles Black
 Reginald Bland
 Francis Blankenburg
 Smedley Butler
 George Butrovich
 Warren Clark
 Francis Cutts
 Myron Eaton
 Martine Etchepare
 Howard Finney
 Elliot Fitch
 Oliver Folsom
 John Fox
 Lester Frick
 Richard Gardener
 James Gerschler
 Donald Graff
 Joseph Harker

Herbert Haymaker
 Benarthur Haynes
 Wilbur Henschen
 Aubrey Horn
 George James
 Louis Kanaster
 Stanley Keenan
 Carl Kingsbury
 Eugene Kolb
 Francis Laird
 Matthew Lehmann, Jr.
 Richard Lombardi
 James Love
 Alvin Maes
 David Marshal
 Marion Marshal
 Frank Mason
 Bertram Miller
 Theodore Mitchel
 John Montgomery
 Frank Mulligan
 Glenn Myers, Jr.
 Edwin Naumann
 Howard Oldham

Thomas O'Melveny
 John Osborne
 Hollis Page
 Sidney Pickles
 Everett Pier
 Donald Prentice
 Luther Robbins
 Kenneth Roberts
 William Roney
 Charles Saygol
 Paul Scott
 Don Alonzo Seeds
 Robert Sherman
 Charles Stewart
 Ferdinand Strauss
 James Taylor
 William Thomas
 Nicholas Ugrin
 Philip Ung
 Mabry Van Reed
 Edward Wheeler
 Arnold Wilking
 Eldon Wright
 Carl Young



Class of '31 as Freshmen

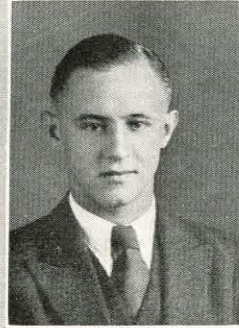
C L A S S E S



Schoeller



Goodman



Maass



Arnerich

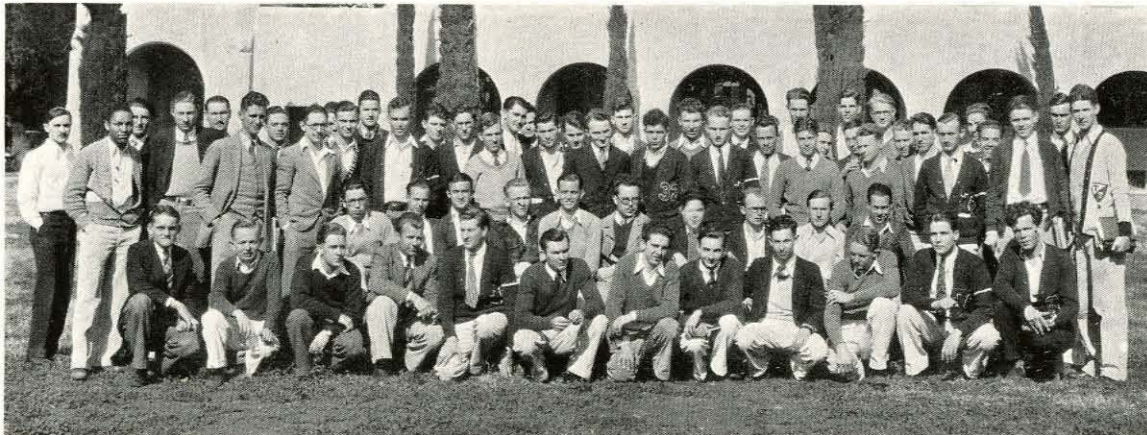
JUNIOR CLASS

Participation in extra curricular activities to extend the diversity of a college training has been exemplified by the class of 1932 in the many things they have accomplished. In athletics as well as in social events, the Junior class of this year has shown its high calibre of activity by winning the intramural athletic championship for the second time in three years, finishing second the other time. This is a record to be well proud of and is also an indication of the class's splendid showing in all types of activity.

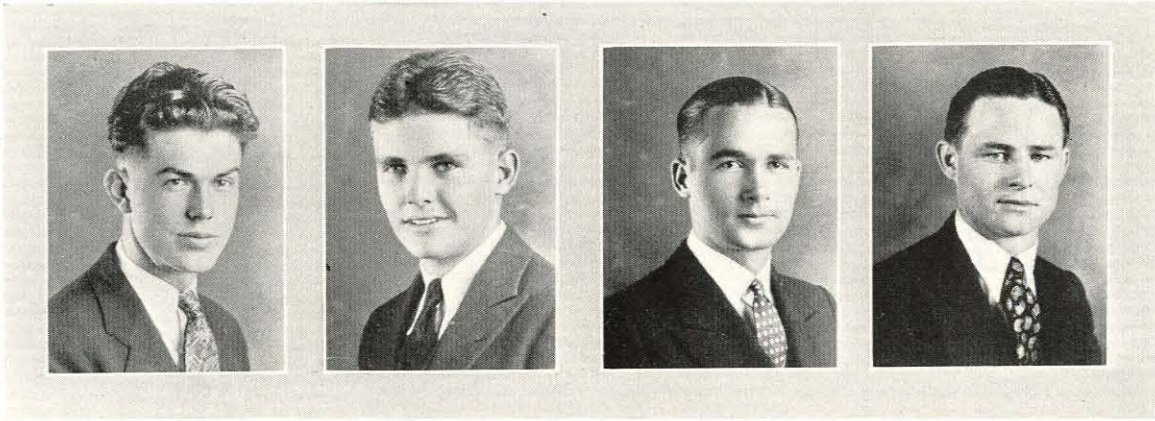
Robert Carey was elected class president during the Sophomore year and he performed the job creditably, presenting one of the best student body dances of the year. This year

Clark Goodman was chosen to lead the endeavors of the Juniors, and he succeeded in showing how much a class president could accomplish by setting his mind to work. Clark Goodman was assisted in directing the activities of the class by Randal Maass as vice president, Phillip Schoeller as secretary and Paul Arnerich as treasurer.

Besides two class dances, and a beach party, a garden party in Dabney garden was sponsored and the class responded to these functions enthusiastically. It is up to this class to set the standard for social and extra-curricular endeavors in the new student houses and with such a remarkable record already achieved it is almost certain that a new type of ideal college life will be perpetuated at Tech.



CLASSES



Lewis

Mathewson

Muller

Andrew

SOPHOMORE CLASS

Under the leadership of John Monning and Walter Scholtz, the class of 1933 received its first taste of Tech life. Losing the pushball contest to the sophomores proved no disappointment, as evidenced by the splendid Rodeo dance presented for the winners as the first social function of the year. Throwing away the "dinks" marked the last of this colorful freshman hazing tradition which has always proven a boon to the new Tech student.

As sophomores, they had the task of creating a helpful influence for the incoming freshmen without the aid of the hazing bee. This did not prove successful until the pushball melee in Tournament Park, when they inflicted a month's accumulation of chastisement in a half an hour on the unfortunate freshmen.

Arthur Mathewson as president during this year stimulated an interest in athletics and activities that brought out the unknown qualities of many men in the class. They responded splendidly to the work of the student publications and intramural sports, and the student body dance presented at the end of the second term at the Beverly Hills Hotel was indeed a colorful indication of an enthusiastic class.

Working with Mathewson and cooperating in making all class functions successful were Jerry Muller as vice president, Wyatt Lewis as secretary, and Thomas Andrew as treasurer. With such a record for student activity already achieved, it is impossible to see anything but a successful year ahead in 1931-32.



C L A S S E S



Coward



Welch



Craig

FRESHMAN CLASS

The class of 1934 entered Tech not as quaking, Soph-fearing greenies, but rather as students who, freed from the usual freshman hazing which makes student relations as well as scholastic endeavor difficult to the average college freshman, enter into the student activities with as much school spirit at the start as the upperclassmen.

At the beginning of the first term the Executive Committee appointed Charles Welch as the Chairman of the Frosh class. Welch chose Carroll Craig to handle the finances of his class, preparations for the Frosh-Soph Rodeo soon giving the new officers something to think about. The Sophomores won the Rodeo, which was held between halves of the Tech-LaVerne football game, and the Freshmen

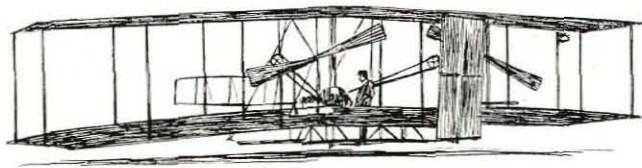
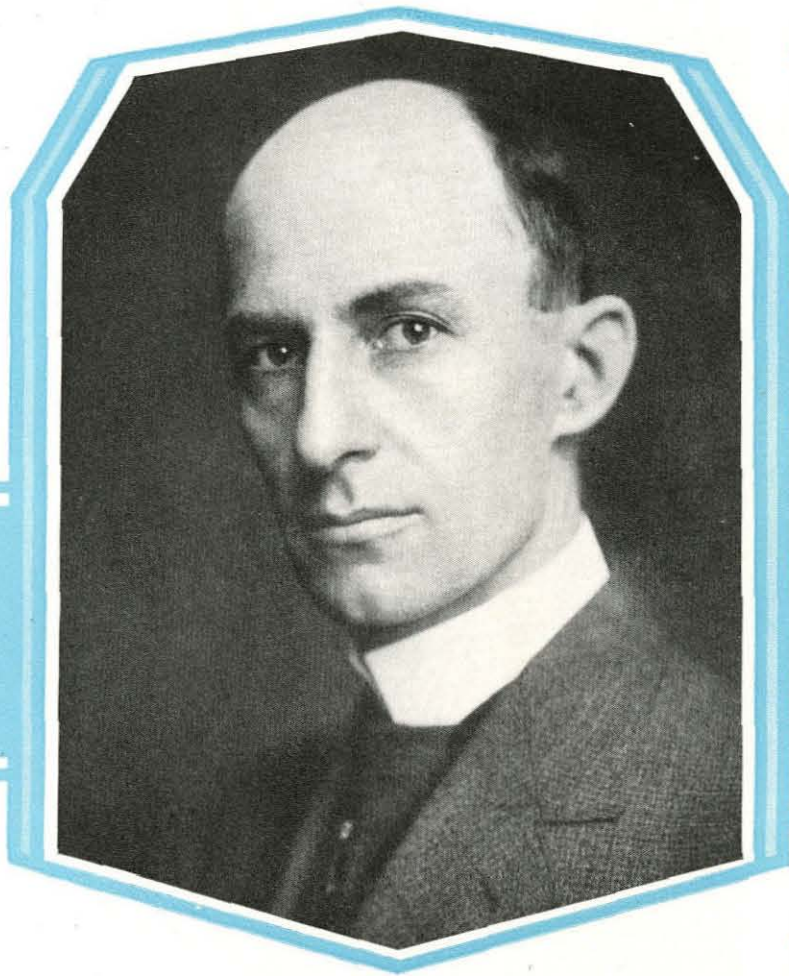
treated the class of '33 to the customary dance given in honor of the victors of the contest, the Rodeo dance being held in Dabney Lounge on Oct. 25 and proved to be a great success. The Frosh-Senior get-together in the form of a dance given at the Pasadena Golf Club was one of the social lights of the first term.

The Oxy Rally, consisting of an auto parade and a demonstration in the Rose Bowl instead of the customary bonfire at Paddock Field, aroused plenty of school spirit for the Oxy game, the freshmen in charge of the rally deserving a great deal of credit.

At the beginning of the second term Charles Welch was elected president, Lamar Coward, vice-president, James Gregory, secretary, and Carroll Craig, treasurer of the class for the remainder of the year.

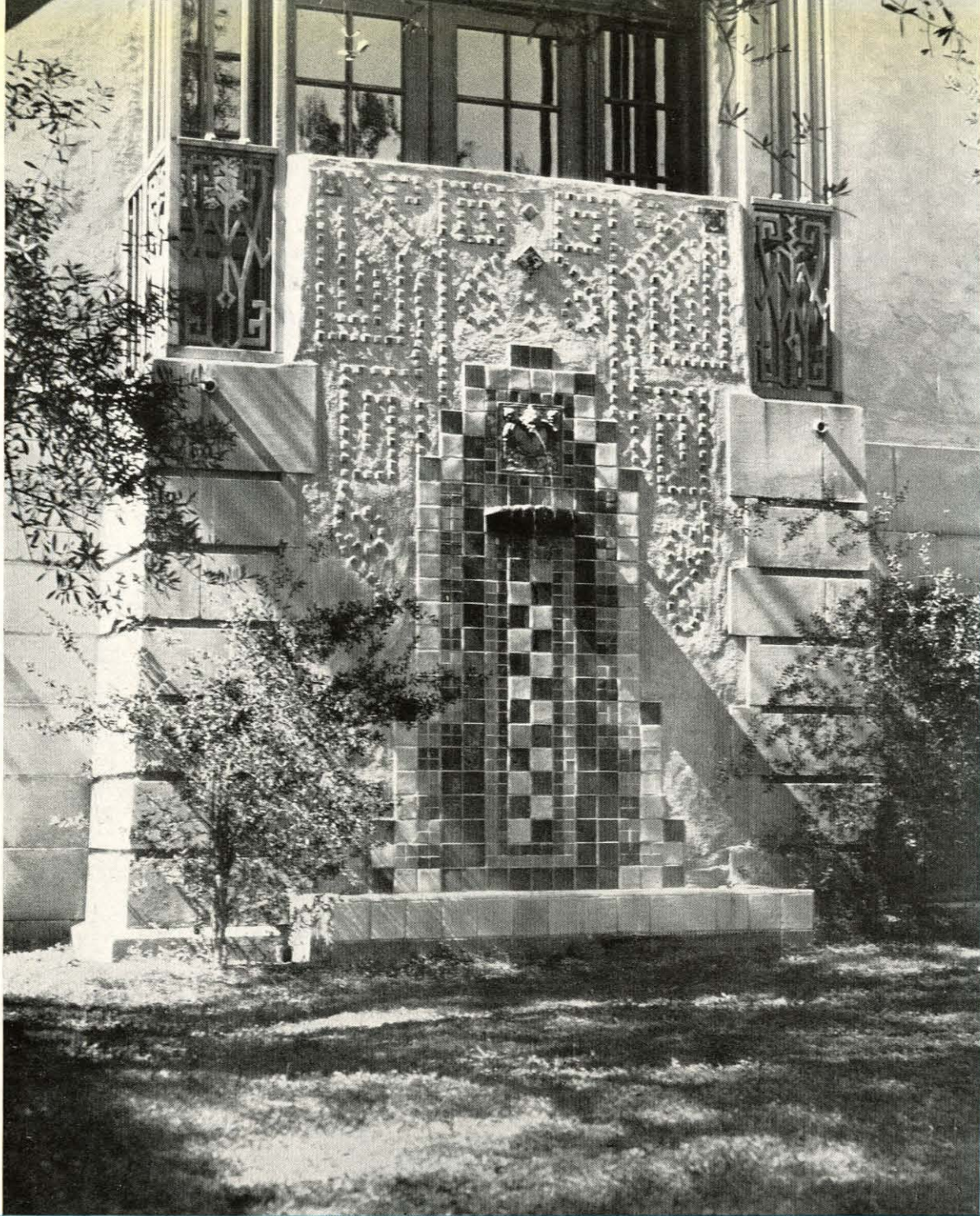






WILBUR WRIGHT

First to achieve successful powered flight in a man carrying airplane, Dec. 17, 1903. Time, 59 seconds.

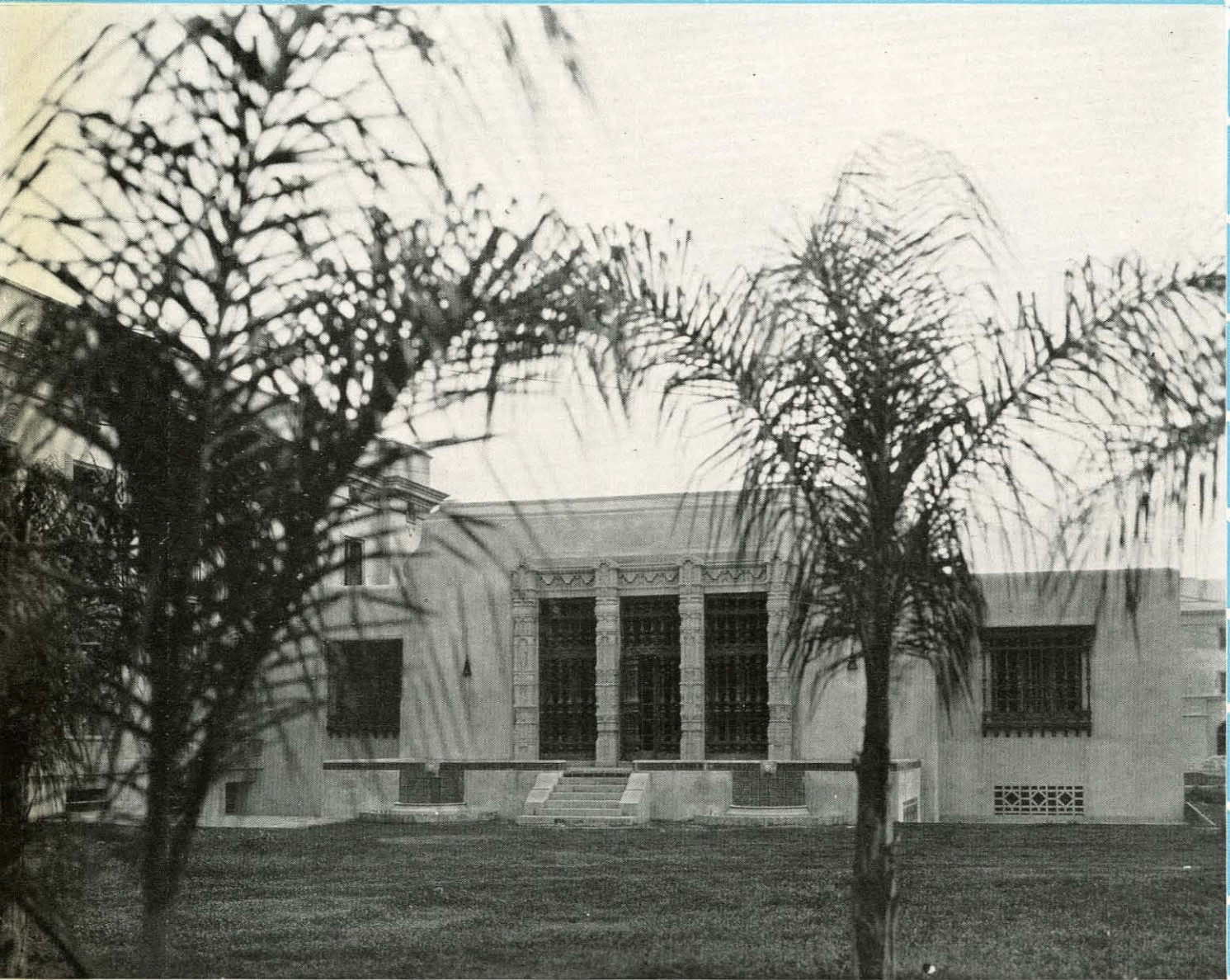


*Sunshine and Shadow
Trace Mosaic Patterns on Dabney Fountain...*

*By Day Wistaria and Ivy Shade
a Lonely Bench — by Night...*



*Gates Chemistry Library from the Palm Grove
Seems an Aztec Mausoleum...*





$$ds^2 = -\frac{e^{g(t)}}{\left[1 + \frac{r^2}{4R^2}\right]^2} (dx^2 + dy^2 + dz^2) + dt^2$$

the Physics Library...



Gates Laboratory of Chemistry

"The chymists are a strange class of mortals impelled by an almost insane impulse to seek their pleasure among smoke and vapour, soot and flame, poisons and poverty, yet among all these evils I seem to live so sweetly that may I die if I would change places with ye Percian King"—John Joachim Becher Circae, 1680.

Modern Olympus
— *the Athenaeum*



Toil or Luxurious Idleness
— *Dabney Lounge . . .*





*Light and Shade
Grace the Athenaeum's Guarded Portals*

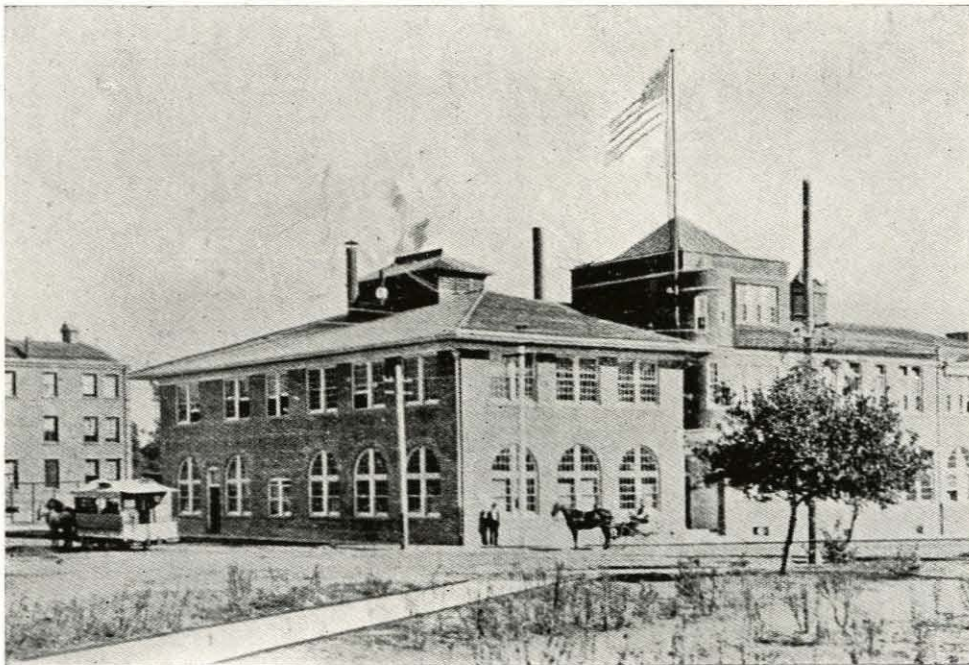
H I S T O R Y

Back in 1891 Amos G. Throop, a wealthy Chicago business man, founded what was then known as Throop University. Located at the corner of Fair Oaks and Kansas Street, this new institution embraced a broad scope of academic subjects for the scholars enrolled in it. Little had the founder and those associated with the thriving new seat of learning anticipated that it would some day become one of the most outstanding technical institutions, not only in the United States, but in the world.

Students ranged from high school grades on through the four years of college, and were given a wide selection of subjects from which they might choose those that were of particular interest to them in the line of endeavor which they wished to follow. Men were given a choice among other things of a great number of technical subjects, including chemistry, physics, and mathematics. The girls and young ladies who were then members of Throop University might perhaps elect to make a study of costume designing, art work, or home management. In addition to such specialized subjects, the students were encouraged to make a deep study of the classics, Greek and Latin.

The overwhelming favor of the students towards the specialized options, and especially towards those of a technical nature made expansion in this field necessary. Accordingly, new buildings and equipment came to meet this need. The technical tendency became so prevalent that in 1893 the name of the school, still in its infancy, was changed to Throop Polytechnic Institute. While its graduates obtained full fledged college degrees, a good share of the members were in the elementary sections.

The year 1908 proved to be the turning point in the history of the institution which the undergraduates now know as Cal Tech. Dr. George Ellery Hale and Mr. Arthur H. Fleming perceived the great possibilities that lay in an institution of this general nature. These men dreamed of a world renowned technical institute that would one day be on the lips of the people the world over and would attract outstanding scientists from the far corners of the world. When the present site was donated, these men were instrumental in making a complete revision of the collegiate organization that then prevailed. The elementary departments were dropped from the curriculum, a



Throop Polytechnic Institute.

H I S T O R Y



non-coeducational system adopted, and a policy of specialization in the basic subjects of science was closely adhered to.

When the World War came, the college was converted into a government training school. The War Department established a graduate R.O.T.C. unit and built the old barracks and gym. Officers were brought in to teach the engineering side of the army, and a great deal of equipment was loaned to the school for instruction not only in the military field, but in other important branches of engineering. Upon graduating from the Throop College of Technology, the men were given a commission in the Engineers corps.

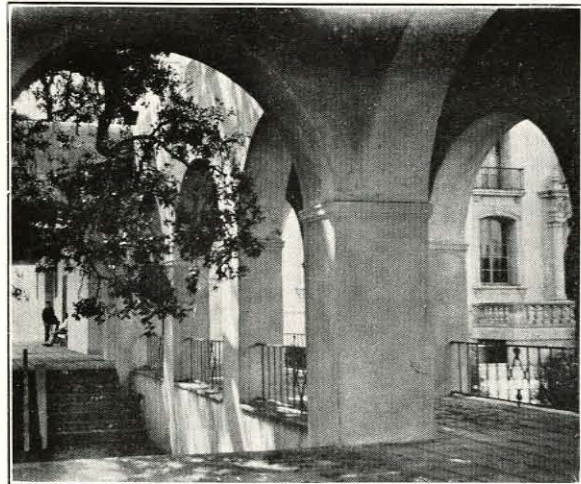
After the War the growth of the institution was phenomenal. The first unit of the Gates Chemical Laboratory was built in 1917, and in 1921 the Norman Bridge Laboratory of Physics became a reality. The trustees of the college realized that to achieve their goal of the ultimate in science, well qualified men would have to be chosen to fill the first chairs in these new departments. Accordingly, Dr. A. A. Noyes, outstanding in the field of chemistry was secured to be the leader of the Gates Chemical Laboratory, while Dr. R. A. Millikan, renowned in the field of physics, was obtained for the directorship of the new physics department. The Southern California Edison Company, realizing the possibilities for study and research in connection with the new institution, built the High Potential Laboratory. It is interesting to note that the million volts from

line to ground planned for this laboratory was conceived here before it was thought possible at any other research center.

Meanwhile, in 1921, Dr. Scherer became seriously ill and was forced to resign his position as president of the Throop College of Technology. Dr. Millikan became chairman of the Executive Council, which position he holds at the present time. Still seeking a name which would be more appropriate, the institution received the name of California Institute of Technology. The fame of the college had been spreading rapidly throughout the world, and students and faculty members in all parts of the world began turning their eyes Tech-ward.

The existing board of trustees of the California Institute of Technology saw the vision of Mr. Fleming and Dr. Hale, but not satisfied, they set the goal of achievement for the new college even higher. Not only was the school to specialize in the classic subjects of engineering and science, but they would expand as new fields of science sprang into prominence.

Geology, a young science, was added to the courses offered by the Institute, when in 1925 Dr. John P. Buwalda was secured to be the leader of this new scientific division. It was not long after when the Daniel Guggenheim Foundation selected the California Institute of Technology for the seat of a large experimental laboratory in the relatively new field of aeronautics. Only last year Dr. Theodore von Karman accepted the position of head of



H I S T O R Y



Gates Chemical Laboratory.

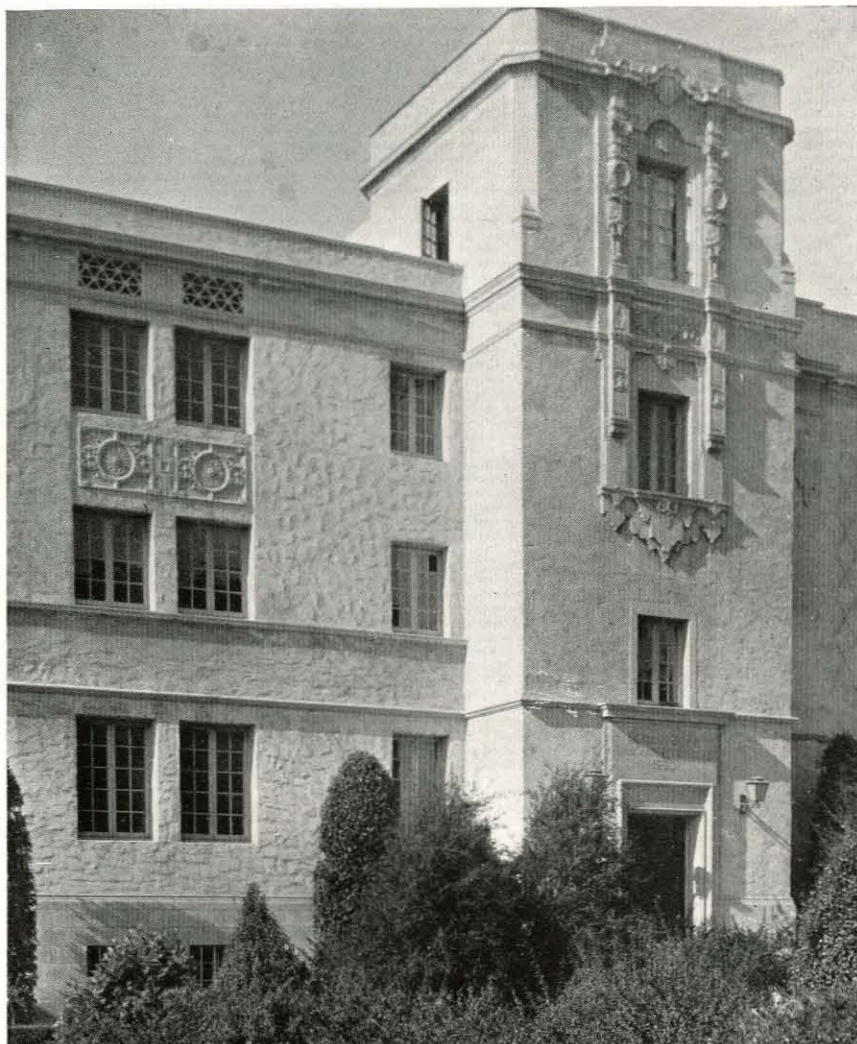
the aeronautics department. Cal Tech was fortunate in persuading him to leave his laboratory in Bavaria to pursue his studies here where he had more equipment available through the Guggenheim Foundation. Dr. von Karman is noted as being one of the two outstanding authorities in the world in the field of aerodynamics.

In 1928 the late Mr. William G. Kerckhoff and the General Education Board, with other donors, made possible the erection of the building which now houses the division of Biology. To fill the position of head of this new department, Dr. Thomas Hunt Morgan,

the most eminent American biologist, was secured from Columbia University, where he held the chair of Experimental Zoology. A division of biology was created rather than forming separate departments of botany and zoology because the relation between the two is quite close and to study them together not only eliminates over-lapping, but further correlates the two branches of one science.

The members of the Board of Trustees had lofty ideals not only as to expansion into the realms of science; they seriously considered the human aspect, and the necessity of having an adequate training in English, History, and

H I S T O R Y



Norman Bridge Laboratory of Physics.

Languages. These were combined in a department of Humanities which was headed by Prof. Clinton K. Judy. To give this building a taste of culture foreign to engineering and science laboratories, a beautiful lounge was built, and classes are conducted informally around beautiful ornamental tables.

But the dreams of the conceivers of the greater Institute of Technology are not yet complete. The astrophysics shop building has just been completed where the 200-inch telescope will be built. The astrophysics laboratory has been started near Culbertson, which will be equipped with a solar oven that will

give temperatures approaching those on the sun. Regulating equipment will be installed to keep everything in synchronism to the most minute part of a second. It will not be many years until a complete observatory, the largest in the world, will be under the direction of the California Institute.

New building units for Chemistry have been financed and construction will soon start. A comfortable building to house the departments of geology and paleontology will be started this summer. New units for biology are seen in the near future along with new housing facilities for the various branches of engineering.

H I S T O R Y



Mehl



Lehman



Ferguson



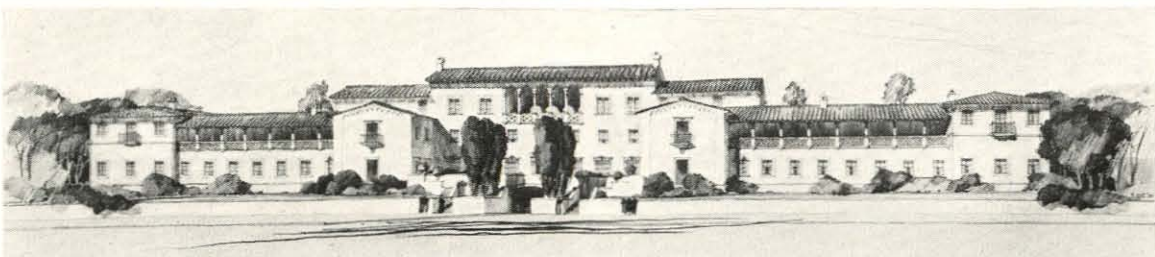
Buffum

Beautiful trees are being planted, and landscaping has been started in parts of the campus that will not suffer from construction work. When the final campus is complete it will be like a bit of paradise with the tasteful unity in architectural style and the beautifully landscaped gardens and entrances. Leading up to a completely refinished and remodelled Throop Hall between arcades will be a series of reflecting pools, the bottoms of which will be azure blue tile. On either side will run a row of Italian cypress trees, which are now growing. But this is not a far off dream, for it is fully expected that the largest part of this program will be carried out in five or six years.

But even scientists and engineers must have comfortable quarters in which to live after laboratory hours are over. To present a fine living atmosphere to the faculty men, the Athenaeum was built. The construction of this

beautiful and luxurious building was made possible through the generosity of Mr. and Mrs. Allan C. Balch, who provided the funds for its construction.

Living conditions on a par with those offered to the professors are soon to be made available to the students with the completion of the student living houses. Three student delegates, Robert Lehman, Phillip Schoeller, and Walter Scholtz, were sent on a complete tour of the United States and parts of Europe to study the best type of living conditions and to formulate a plan for working them into the new unit consisting of four distinct houses, not dormitories in the usual connotation. In addition to the three members of the committee who made the trip, valuable work was done by the remaining members of the committee, John Mehl, Lawrence Ferguson, Charles Coryell, William Pickering, Charles Jones, and



South Elevation of Student Houses.

H I S T O R Y



Coryell



Scholtz



Schoeller

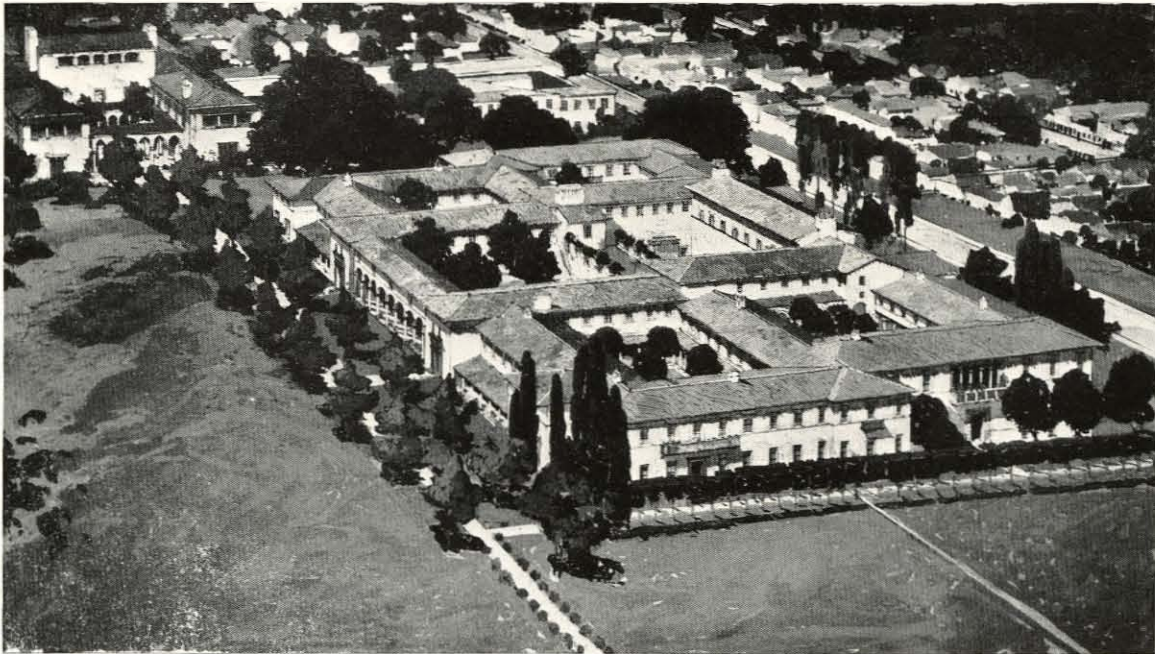


Jones

Emery Buffum. Fraternities have agreed to dissolve to best work out this plan conceived by the students on a thoroughly democratic basis.

Robert Lehman, student body president, was the leading factor in getting not only the consent, but the enthusiastic following of the students, the faculty, and the trustees in the plan

which is to be adopted next year. A truly objective study, and an application of the results of the study to the conditions here are possible largely because of the absence of any tradition that has grown to such strength that it must be preserved regardless of the worth of the tradition.



New Undergraduate Living Houses With the Athenaeum in Background.

CAMPUS PERSONAGES

Portraiture by
CARL A. GIST

MY DEAR YOUNG FRIENDS:

I could sing a hymn of praise with the refrain of the splendid progress in applied science that we have already made, and the enormous further progress that you will bring about. We are indeed in the era and also in the native land of applied science.

But it lies far from my thought to speak in this way. Much more, I am reminded in this connection of the young man who had married a not very attractive wife and was asked whether or not he was happy. He answered thus: "If I wished to speak the truth, then I would have to lie." So is it also with me.

Just consider a quite uncivilized Indian, whether his experience is less rich and happy than that of the average civilized man. I hardly think so. There lies a deep meaning in the fact that the children of all civilized countries are so fond of playing "Indians."

Why does this magnificent applied science, which saves work and makes life easier, bring us so little happiness? The simple answer runs:—because we have not yet learned to make a sensible use of it. In war, it serves that we may poison and mutilate each other. In peace it has made our lives hurried and uncertain. Instead of freeing us in great measure from spiritually exhausting labor, it has made men into the slaves of machinery, men who for the most part complete their monotonous long day's work with disgust, and must continually trouble for their poor rations.

You will be thinking that the old man sings an ugly song. I do it, however, with a good purpose, in order to point out a consequence. It is not enough that you should understand about applied science in order that your work may increase man's blessings. Concern for man himself and his fate must always form the chief interest of all technical endeavors, concern for the great unsolved problems of the organization of labor and the distribution of goods, in order that the creations of our mind shall be a blessing and not a curse to mankind.

Never forget this in the midst of your diagrams and equations.

Albert Einstein



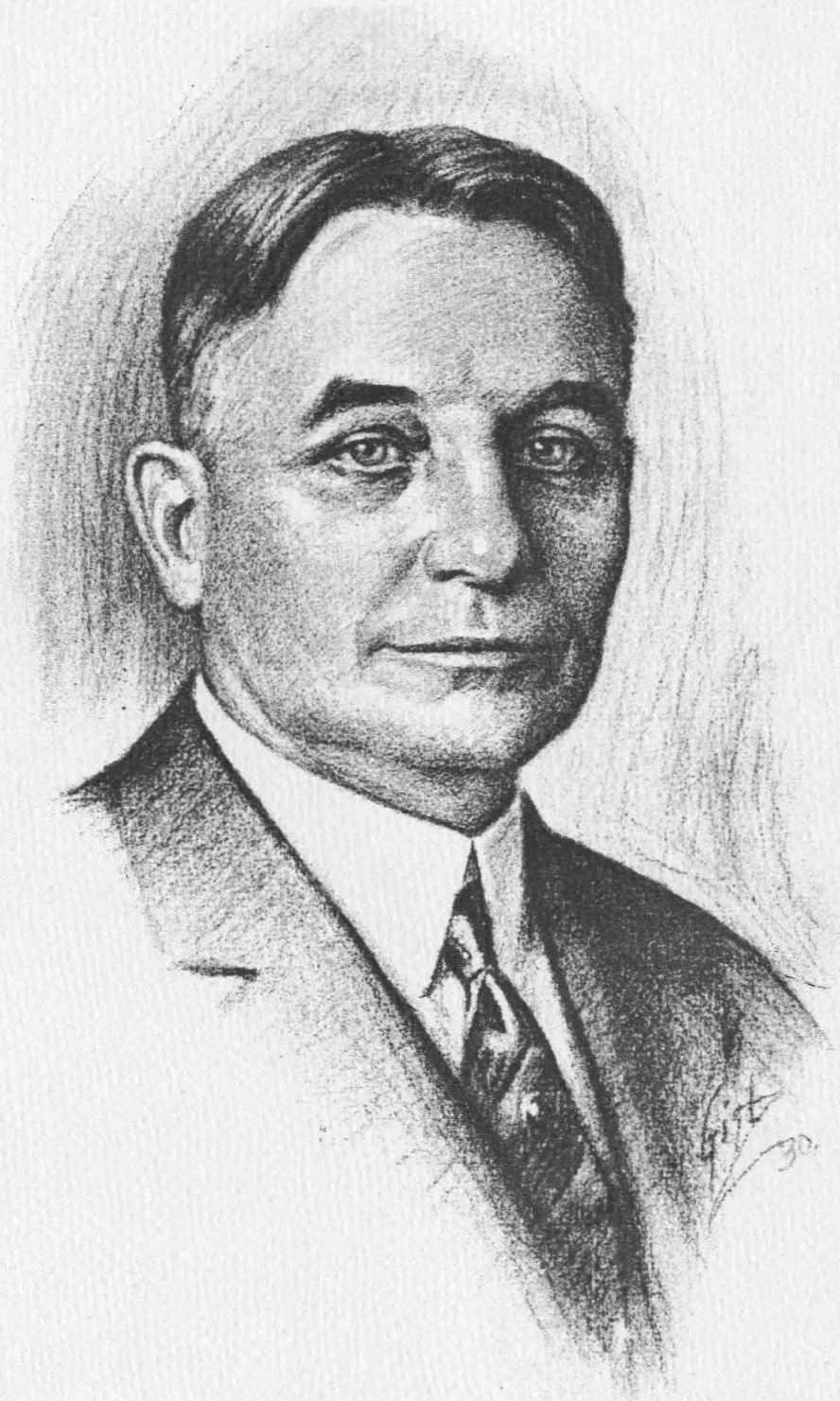
ALBERT EINSTEIN. Ph.D.
NOBEL LAUREATE
Research Associate in Physics



ROBERT ANDREWS MILLIKAN, Ph.D., LL.D., Sc.D.
NOBEL LAUREATE
Director of the Norman Bridge Laboratory of Physics



THOMAS HUNT MORGAN, Ph.D., LL.D., Sc.D.
Chairman of the Division of Biology, William G. Kerckhoff
Laboratories of the Biological Sciences



WILLIAM BENNETT MUNRO, Ph.D., LL.D., Litt.D.
Professor of History and Government



ARTHUR AMOS NOYES, Ph.D., LL.D., Sc.D.
Director of the Gates Chemical Laboratory



HARRY BATEMAN, Ph.D.
Professor of Mathematics, Theoretical Physics, and Aeronautics



ERIC TEMPLE BELL, Ph.D.
Professor of Mathematics



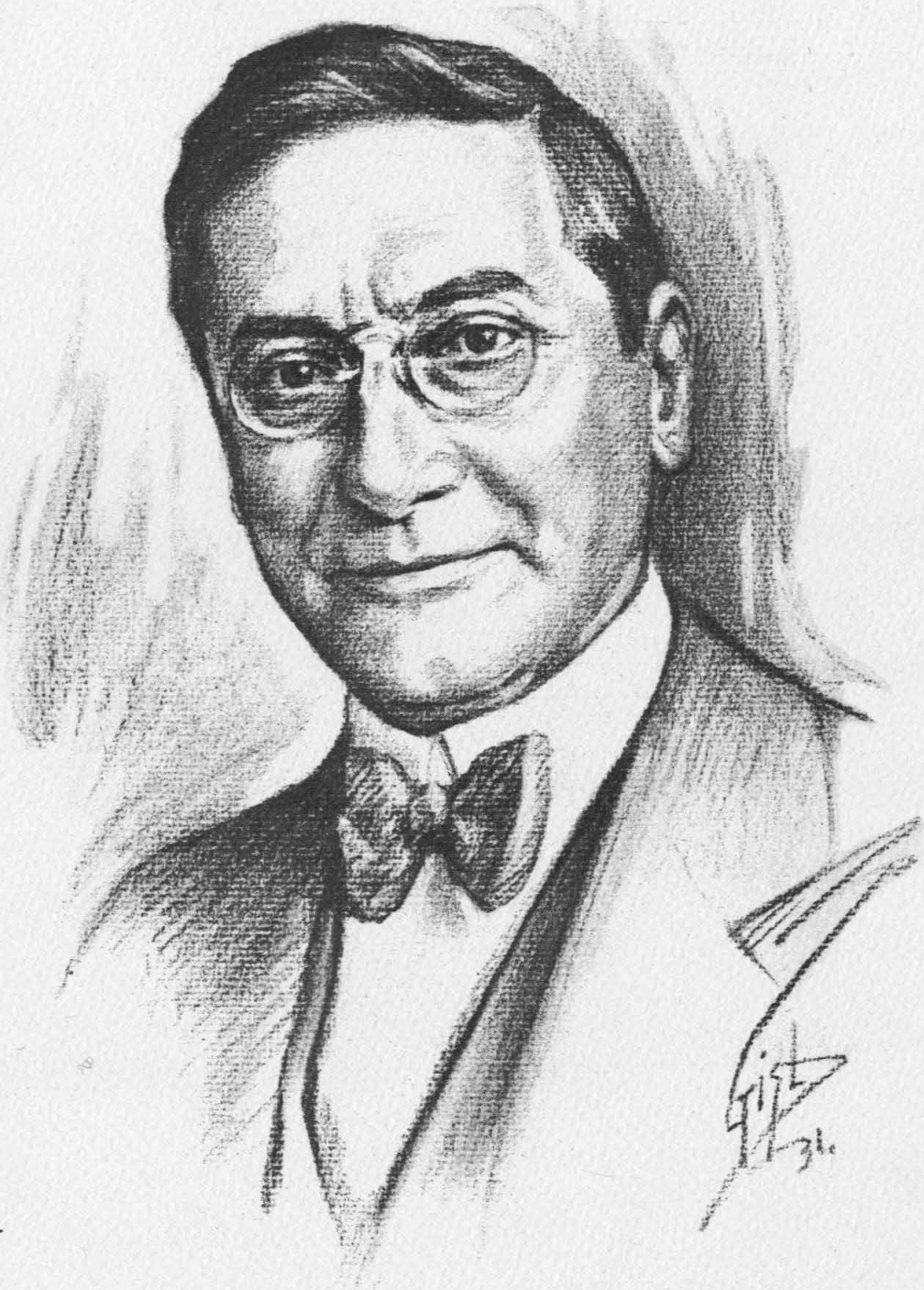
PAUL SOPHUS EPSTEIN, Ph.D.
Professor of Theoretical Physics



THEODOR von KÁRMÁN, Ph.D., Dr. Ing.
Director of the Graduate School of Aeronautics



FREDERICK LESLIE RANSOME, Ph.D.
Professor of Economic Geology



THEODORE GERALD SOARES, Ph.D., D.D.
Professor of Ethics

*The Present is the living sum-total of the
whole past.*

—CARLYLE

BOOK II

ATHLETICS



Mazquez

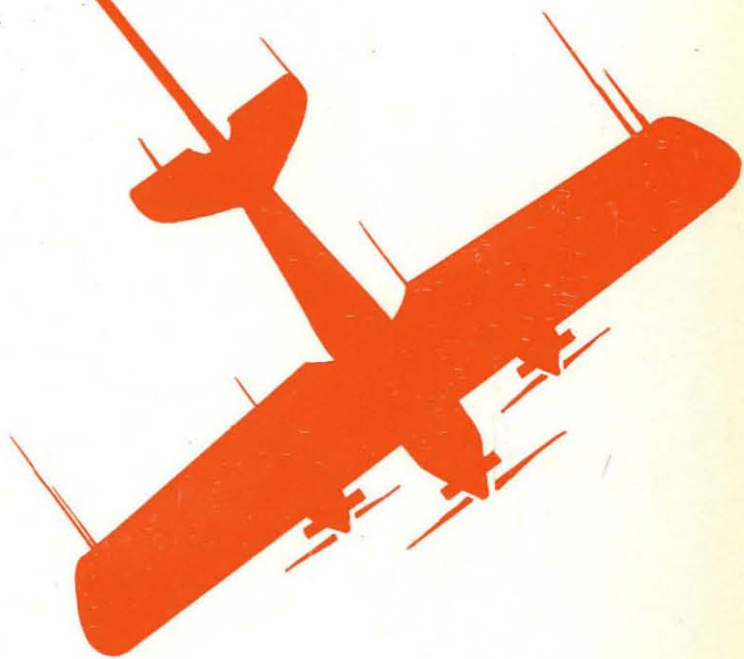
C O N T E N T S

MAJOR SPORTS

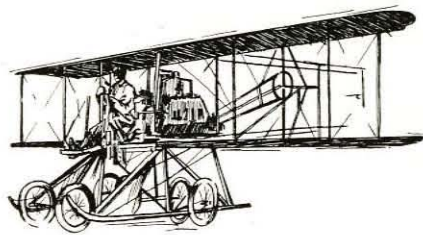
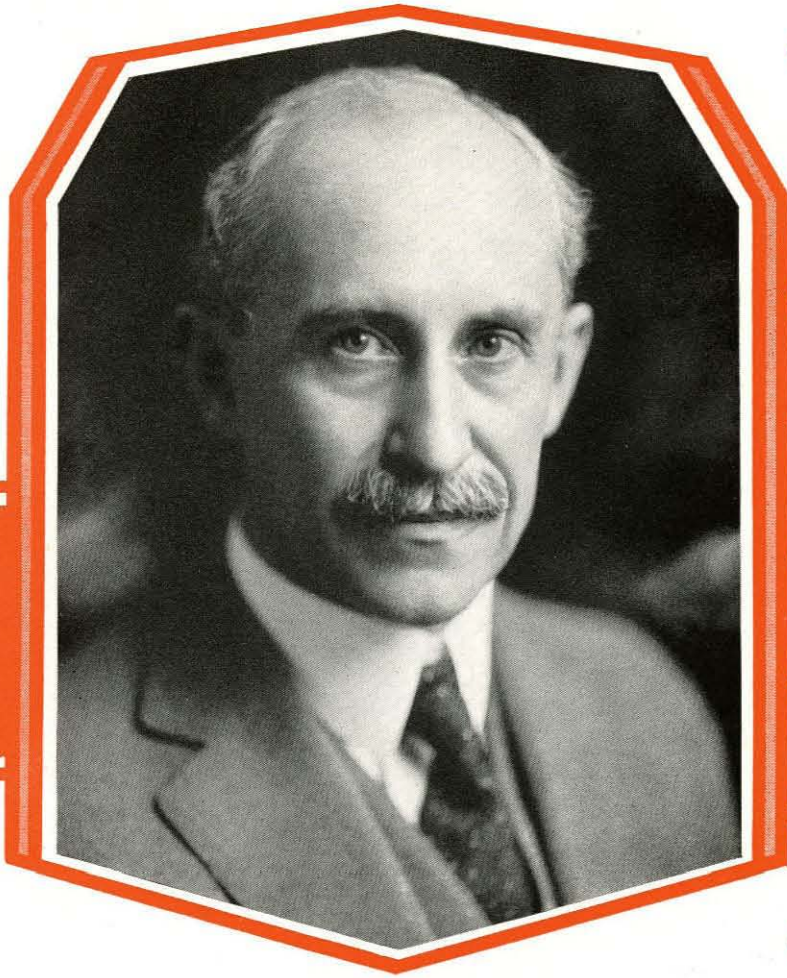
MINOR SPORTS

INTRAMURAL SPORTS

FRESHMAN SPORTS







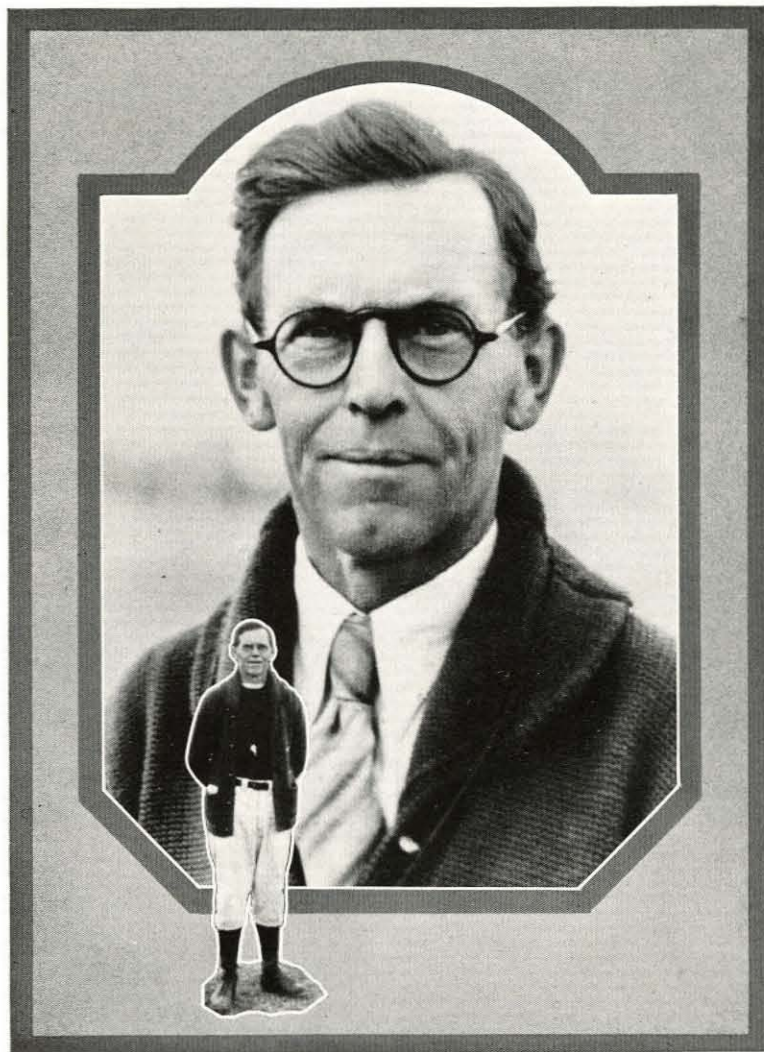
ORVILLE WRIGHT

First to achieve successful powered flight,
December 17, 1903. Time, 59 seconds.

The work of the Wright brothers was entirely
experimental, their scientific attempts being
crude and unsatisfactory.

COACH "FOX" STANTON

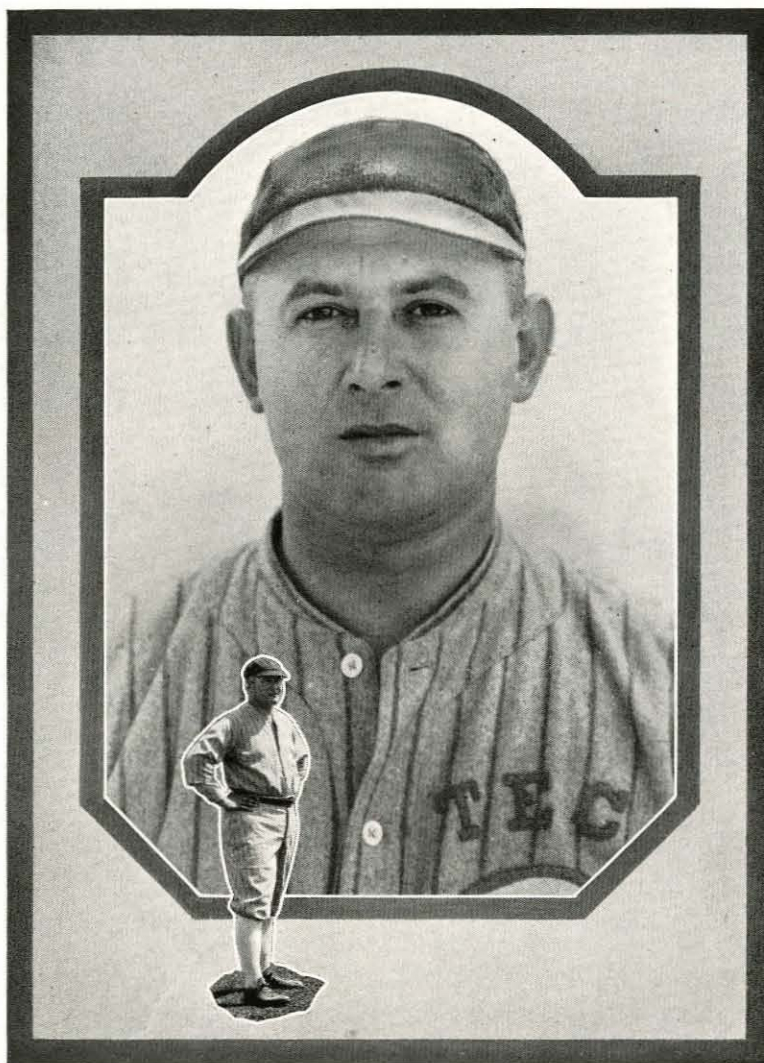
Demonstrating that character and victory can go hand in hand has been the achievement of Coach "Fox" Stanton at Tech. Known and respected by all for his splendid sportsmanship and hard fighting teams, he has been looked up to as one of the real personalities of the college sporting world. Developing the moral attitude of the athlete has been the stimulus for creating the remarkable teams that he has produced in track and cross country as well as in football. In work as well as in play he has always held sportsmanship first and through this he has created a clear, courageous, everlasting Tech tradition. During his ten years of coaching at Tech he has always produced teams which have finished near the top, but this year's football squad won the first undisputed championship ever achieved, truly a real reward for such a remarkable coach and sportsman.



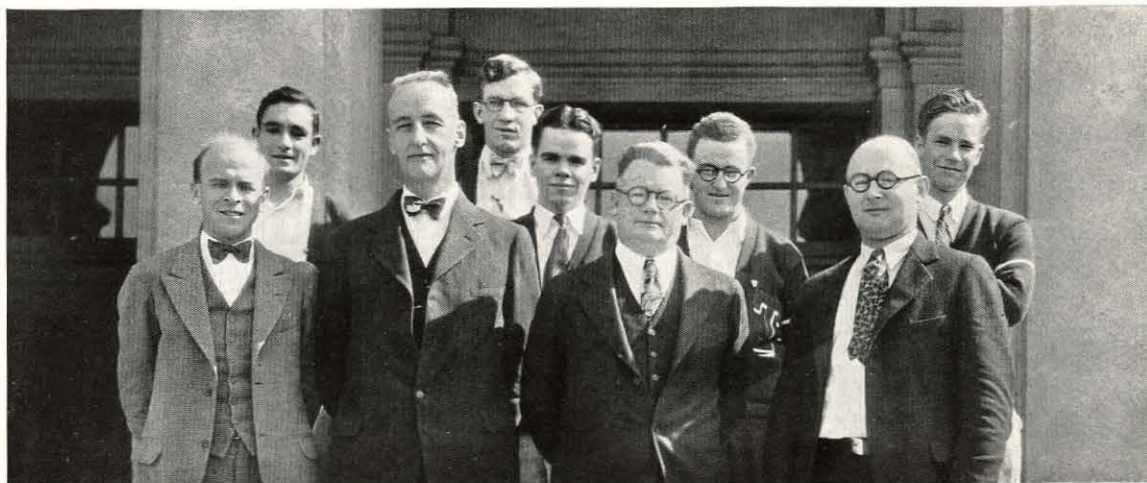


COACH HOWARD Z. MUSSELMAN

Coaching varsity baseball, freshman basketball, and managing the athletics of the college, Coach H. Z. Musselman is known and admired by all Tech men. Because of the lack of experienced athletes in Tech, he has always started at scratch, but in spite of this handicap he has always produced teams of which Tech can well be proud. In the direction of intramural sports he has encouraged such a widespread program of activity that practically every man in the school has participated in intramural athletics. Through his consistent efforts in keeping up the interest in baseball, teams have been built up from green material that always are a credit to Tech. His men play with fighting hearts, and for the love of the game. Through his fine personality and sportsmanship Coach Musselman has earned a place of regard in the hearts of Tech students.



ADMINISTRATION



Eastman
Sutton

Buffum
Michael

Hacker

Murdock
Sorenson

Newby
Musselman

ATHLETIC COUNCIL

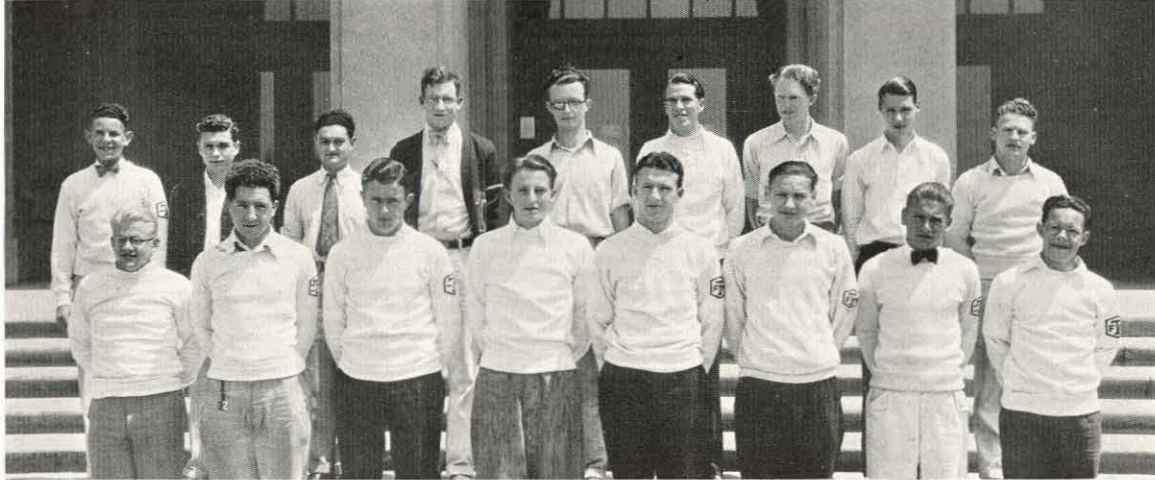
Under the skillful guidance of Professor Royal W. Sorensen, Director of Athletics, at the Institute, the Athletic Council has voiced and fostered the athletic policies at this school for many years. Membership is limited to those faculty members and students concerned directly with the management and functioning of athletics. Coaches Fox Stanton and H. Z. Musselman; the student athletic manager, Bill Hacker; a delegate-at-large, Sam Eastman; and the senior managers of sports during the seasons of their respective sports, are those of the members of the council. During the fall season, Hacker, besides being athletic manager, was also senior manager of football, while Buffum and Murdock were senior managers, respectively, of basketball and track.

One of the major questions of importance which was decided at the last football meeting of the conference was the agreeable admittance of the State Teachers College at Santa Barbara into the Southern California Intercollegiate Conference. This conference, in which Cal Tech has been a member for a long time, now includes eight colleges, all of which are in this section of the state.

It has been chiefly through the efforts of the Athletic Council that the Institute athletics have never been over-emphasized or "commercialized." Although scholastic requirements at Tech are more strongly stressed than are athletics, the minimum requirements for physical education supplemented by apt and skilled coaches have brought out into the field many men who would otherwise have steered clear of participating in any sport. The Athletic Council's most important work is that of meeting other conference delegates for determining schedules, rules, and eligibility of competing athletes. Following the close of each sport season, faculty delegates from among the members of the council are sent to the regular meetings of the Southern California Intercollegiate Conference Board where the schedule of the games for the next year is made up.

This year's council should feel proud of the efforts of the 1930 football team, which demonstrates that the ideas and plans that have issued from the council have fostered not only a fighting eleven, but a winning one in the face of stiff competition.

ADMINISTRATION



Efromson Crutchfield Grafman Buffum Fletcher Coward Kent Bushnell Pruden
Lien Schultz Hogan Grossman Smith Kalliwoda Hibbs Cleveland

ATHLETIC MANAGERS

One knows that no sport could hope for complete efficiency without managers. Yet praise for the work and spirit of the team is dwarfed in comparison to the credit given to the team itself. A competent staff of managers really works harder as a whole than the group out for the sport. This past school season has witnessed the careful and excellent choice made in voting William Hacker of the senior class to take over the office of student athletic manager. His knowledge of matters relative to the functioning of his duties coupled with an ardent enthusiasm to give his best in the service of athletics at the Institute, prove his capability to act as manager.

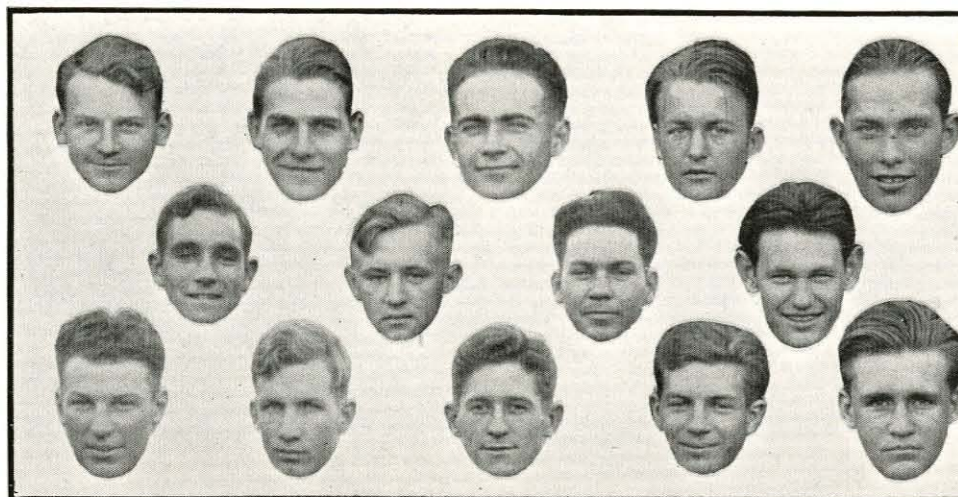
No small part of the credit for Cal Tech's successful football season should go to the timely and ambitious work of the football managers. With Hacker as senior manager appointments to men of the undergraduate classes were: Hibbs and Kent, juniors; Clark, Bamberger, Russell, and Palm, sophomores; and Crutchfield and Coward, freshmen. All of these men are to be commended for a successful season and their individual good work.

About Charles Buffum revolved the task of managing the affairs of basketball. There is no need to repeat his especially fine work and choice of able assistants. Among these men are to be found the following: freshmen, Bushnell and Kalliwoda; sophomores, Efromson, Fletcher, and Newcombe; and juniors, Chambers and Gregory.

As senior manager of track, DeWolfe Murdock has displayed evidence of his capabilities in this field. Under Murdock's supervision the following undergraduate members were: Pruden, Grafman, and Hibbs, juniors; Berkley, Simpson, and Secord, sophomores; and W. Murdock and Smith, freshmen.

In the minor sports Jack Grafman piloted the cross-country team through the season, while Howard Smits acted capably for the swimming squad. Much of the success of the intramural sports this year must be credited to the hard work of Arthur Brooks, and his assistant, Harold Roach. Through their consistent efforts more spirit was created in these events than has been seen in many years, and their standards set a new high level.

CONFERENCE



In winning the first undisputed major championship for Tech, the members of the football squad and Coach "Fox" Stanton worked hard and faithfully through a season of eleven weeks, playing nine hard games. Tech is proud of the wearers of the black shirts, as they themselves are rightfully proud of their accomplishment. This feeling is created not only by the knowledge that the team won all its games, but also by the realization that the men played a clean-cut, hard fighting game at all times. •

CHAMPIONS



Through Coach Stanton's efforts the squad developed from an unheralded group into an undefeated team, four members of which were recognized on the all-conference first team.

The gold footballs carried through life by the nineteen foremost members of the squad of thirty are the least of the benefits received by them. Each man will attest that the ability to "play the game" with the true engineer's spirit is worth more than any honors. Tech is proud of the squad and of Coach Stanton.

FOOTBALL



Captain Dickey's fighting spirit well earned his all-conference rating.

PRE-SEASON

During the two weeks before the opening of the fall term, anyone who wanted to stand in the hot sun could have seen a group of perspiring athletes working on the football field in Tournament Park, both in the morning and the afternoon. Among the twenty odd men charging the dummy on the sawdust pile were twelve returning lettermen led by Captain Dickey, only three of whom were two year lettermen. From this squad as a nucleus, Coach "Fox" Stanton built up a team representing not only the sportsmanship and fighting spirit traditional at Tech, but also a squad which rewarded his efforts by winning the Southern California championship with a clean record.

As usual, Tech was rated near the bottom of the conference, with the chance of scoring one or two upsets for which the "Fox" is always counted on. Occidental and Pomona were given good chances to win the title, and San Diego, which soon threw a bombshell into the league, was allowed a slight possibility.

Tech faced a long hard season of nine games on successive week-ends, including extra-conference battles with Arizona, U. C. L. A., Stanford, Santa Barbara, and Cal. Christian. The first game with Santa Barbara was a short two weeks off when the squad first turned out on the Tournament Park grass.

Tech men learn quickly, however, and by the end of the first week the scrimmaging showed that the team was rapidly whipping into shape. The backfield, with Dickey, Watson, Bennett, and Eastman had real power, and several men of equal ability were contesting for the three middle line positions left so completely open by graduations of the previous year. This hole in the middle of the line was one of the Coach's biggest worries. A great deal of work was seen to be necessary in a few weeks before the forward wall could hope to stop the heavy teams which were slated to meet Tech.

F O O T B A L L



Captain-elect Watson's playing is as fiery as his hair.

Early estimates of the team's weight were encouraging. The backfield for the first time in years averaged 170 pounds, while the line was light, but normal for Tech with an average of 160 pounds. What the line lacked in weight, however, was made up for in speed and push. Early in the second week of practice a game was held with Glendale J. C. that showed the power of the Engineers' backfield. The score of 7 to 0 for Tech testified to Watson's punting power, and the holding strength of the line. Craig at center, and Murdock and Johnson at the guard positions held the center of the line tight against the plays that the more experienced tackles and ends turned inside. The lateral passing attack developed by the "Fox" had its baptism for the year; Dickey and Bennett showed the Glendale squad how the spectacular side passes could be worked.

From this time on it was apparent to Coach Stanton and the squad that the team had

possibilities of winning a good many of their games. The players had given two weeks of their vacation, and the Coach many hours of preparation for the season. Taking one game at a time, and instilling the team with confidence, and the Tech fighting spirit as no one else can ever do, Stanton was building up a squad from inexperienced men that was destined to win every conference game. Under his guidance most of the first string men had developed from the scrubs and green freshmen of two years previous into players able to execute the tricky plays for which the "Fox" is so famous.

On the day of registration the squad departed for Santa Barbara to open the season against the State College. Only one injury had hit the team, Rice being laid up from a tackle position with a broken collarbone. The game was to be the only chance for the Beavers to find their weaknesses before the game with Arizona the following week.

F O O T B A L L



"Dopey" Tom Crawford, all-conference end was there on the passes.



Smiling Ed Hayes, all-conference end, never down, never ruffled.

SANTA BARBARA

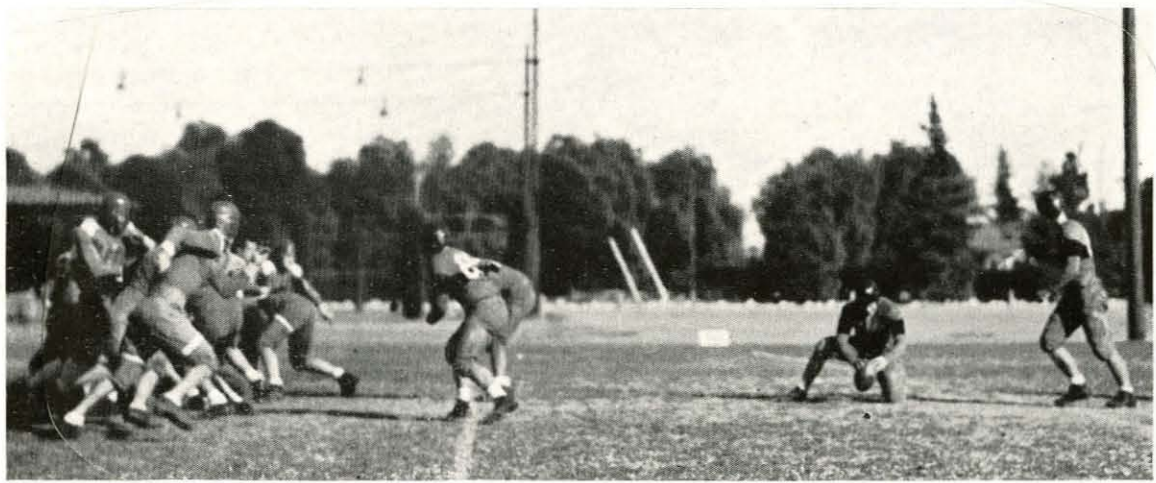
Under perfect weather conditions the Engineers played their first game of the season with Santa Barbara State College at Pershing Park in the channel city on the night of September 28. Showing much improvement in their drive over the practice game with Glendale J. C. the week before, the team rolled up twelve first downs to the Stater's seven, but failed to do more than tie the score, 6 to 6.

Delayed fullback bucks by Watson and Dickey proved to be ground gaining plays for the Beavers, when started behind the light, but fast, line. The center of the line held remarkably well, and Shuler and Morris at tackles were able to stop most of Santa Barbara's plays. State was inside Tech's forty yard line only once, when they recovered a fumble and

bucked thirty yards to a touchdown.

Although the Engineers were in scoring territory numerous times, the team lacked the experience needed to consistently carry on a scoring drive. The team played thirty minutes of good football. The best play of the evening came in the third quarter when Eastman scored on a pass from the twelve yard line.

Those rooters who journeyed to Santa Barbara will well remember the dazed expression of the State quarterback when, in a sideline play, Watson stepped outside the field, ran around the line, stepped inside and neatly downed the quarter before he had moved with the ball. Bill Hacker, manager, will remember getting out of bed to answer a fake call from the pranking junior members of the squad.



Good For a Point



FOOTBALL



Ted Bernstein, "I'll get that man next time."



"Grinning" Gunderson, part of Tech's stone wall.

ARIZONA

With but three weeks' practice behind it the team met Arizona at night in the Rose Bowl on Friday, October 5. The score, 26-12, in favor of Arizona does not tell half as much as the fact that Tech made thirteen first downs against Arizona's ten. Outside of three runs made by Hargis, the Wildcats were considerably outplayed by the Engineers, and as Arizona's Coach, McKale, said after the game, his team was mighty lucky to have won.

Tech rooters were surprised to see the light Tech line play the heavier Wildcat forwards to a standstill and push them back on numerous occasions. Coach Stanton sent his team in with a lateral passing attack that completely buffaloed their opponents. Laterals, Bennett to Dickey, and fullback bucks by Watson ac-

counted for most of the ground gaining that brought Tech into scoring position six times.

In the first quarter Dickey made a long gain on a lateral to the two yard line where the ball was bucked over. A 47-yard run by Watson failed to score, but in the third quarter the sixth attempt at Arizona's goal line was successful when Dickey went over from the thirty-yard line on a lateral and a buck. The team learned the power of its clever open formation attack, and showed Tech what it could do in fifty minutes of real football. The best play of the game was Watson's seventy-yard run through the middle of the line to the Wildcats' ten yard line. "Play sixty minutes of the same kind of football," said coach, "and we'll beat Pomona."



Hayes Intercepting



F O O T B A L L



"Big" Bill Shuler,
all-conference tackle, downed them
all over the field.

POMONA

Cal Tech 2, Pomona 0, brought joy to all Tech rooters who journeyed to Claremont on the night of October 18. Primed since the La Verne game, the team displayed a full 60 minutes of fierce charging and driving to win by a safety which came as the direct result of a cleverly executed quick kick.

More than exceeding the expectations of Coach Stanton, who was tired of being beaten by Pomona, the first string played the full game without a substitution in what was probably the hardest fought contest ever staged between the two schools. The Sagehens were able to make almost no gains through Tech's line. Frank Nickell, a former Engineer player, was brought over to coach the center men on the varsity line in the practice sessions, and they

stopped the celebrated Pomona wedge play on the line of scrimmage.

Shuler and Watson were outstanding men for Tech. Craig, Johnson, and Murdock made the center of the line a stone wall. Morris, Crawford, and Hayes ruined the end runs of the Sagehens. Goodman showed excellent judgment at quarter and Captain Dickey and Bennett played driving games in the backfield.

Although Pomona made a good deal of noise over Captain Putnam and Stancer who carried the ball for many good gains, the Tech rooters out-yelled them in applauding the thrilling dashes of the Engineer backfield.

The first quarter of the game produced no advantage for either side. In the second



Bennett Leads the Way

F O O T B A L L

"Jumping Jack" Morris,
just wouldn't let them through
right tackle.



quarter a cleverly placed quick kick from Watson's toe put Pomona on their own eight yard line. A fumble, due to a bad pass from center put Murdy out of kicking position. Tom Crawford promptly nailed him behind the goal line on an attempted run, and Tech was ahead, 2 to 0.

Pomona came back and worked the ball to Tech's 6 yard line where the Beaver line displayed one of the greatest efforts ever made by a Tech team. Every man presented an airtight defense, and held Pomona for four downs on the two yard line. Watson kicked out of danger and Dickey was going strong in the middle of the field after intercepting a pass when the half ended.

In the third quarter Watson provided a big thrill with a thirty yard run around end without any interference in a broken field. Pomona again threatened the goal, and in passing up a chance to kick a field goal, passed up the game. The fourth quarter will be remembered by those at the game as one in which Bennett cleverly dodged his way through Pomona for a forty yard run, and later stood in the fog looking vainly for a punt to come out of the thick mist.

Tech's possession of the coveted white ball used in the game was more remarkable for the fact that the team played the entire game without a substitution. Tech made nine first downs to Pomona's five, and intercepted four out of the Sagehens' nine passes.

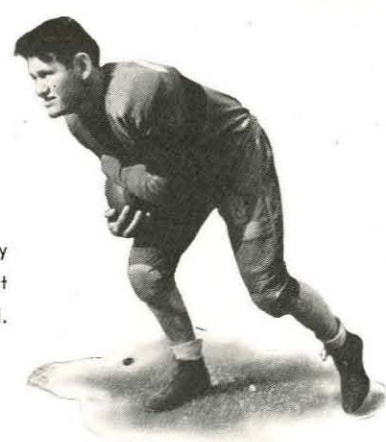


Tech's Stone Wall

F O O T B A L L



"Handsome" Clark Goodman knows his signals.



"Iron Man" Dickey ate little but hit hard.

LA VERNE

In the first conference game of the season, the varsity showed itself to be the master of the situation at all times against the La Verne team at Tournament Park, rolling up a final score of 27 to 13. Although the second line-up got into trouble when the visitors scored twice in the second quarter, the squad as a whole functioned very well. La Verne came well coached on lateral passes so that Tech was forced to win on straight running plays and forward passes.

What La Verne lacked in reserves was almost made up by the weight of her forward wall. With the line working hard to open holes, Tech drove down for a touchdown in the first quarter, and added another with the

second best play of the day, a thirty yard pass from Bennett to Shuler. La Verne retaliated with two touchdowns on the second string before the half ended. In the third quarter Tech recovered a fumble on the opponent's 15 yard line and soon made another touchdown. The best play came in the fourth quarter when Tom Crawford made a superb catch of a 40-yard pass from Watson and went over for the fourth touchdown.

While "Fox" Stanton was drilling his squad in preparation for the Pomona game the rest of the world began to realize that Tech had the makings of a championship team. The backfield had shown plenty of drive, and the line had more than come up to expectations.



A Big Hole for Benny



F O O T B A L L



Bruderlin at tackle learned how, and showed them how.



Emery Buffum; always showed a fighting heart.

U.C.L.A.

Tired out by its hard-fought and well-earned victory over the Sagehens of Pomona on the previous week-end, the team took the field against U. C. L. A. determined to give the Bruins a battle. Outweighed completely by the visitors who averaged thirty pounds to the man more than the Beavers, the first string gave a good account of itself in the first half, ending the period with the score 6 to 0 in the Bruins' favor. The let-down after the Pomona game had its effects in the second half, however, and the game finished 30 to 0.

Tech's fighting team showed up splendidly in the first half, halting two Bruin marches early in the first quarter by holding for downs near our own ten yard line. The lone score for

U. C. L. A. in this half was the result of a beautiful pass to an uncovered man. No score was made in the second quarter.

In the second half the Engineers' stout defense wilted under the weight and power of a superior force and the visitors scored four times. Forster and Bergdahl were the main ground-gainers for U. C. L. A., but were unable to convert any of their four touchdowns. During this half Coach Fox Stanton pulled one of his best tricks, a short, snappy, underhand pass that started as a wide lateral and gained considerable ground each time it was used. In the fourth quarter Tech spurted with two long passes, one from Bennett to Shuler for thirty yards being the best play of the game.



Eastman Around La Verne's End

F O O T B A L L



"Hot Shot" Bennett,
the mighty atom, was Tech's
crack field general.

OXY

After an exchange of punts in the first quarter, Tech received the ball on her own thirty-five yard line. Watson hit the line for a first down and the team started on its march to the Tiger's goal. With machine-like precision the Engineers worked their way to the four-yard line, Watson driving the whole forward wall back for five and six yard gains, and Eastman providing thrilling gains with perfectly executed lateral passes for variety. On the four yard mark the crowd held its breath and then burst its lungs as Captain Dickey made a terrific leap over both lines for a touchdown. The kick was missed. Score: Tech 6, Oxy 0.

After the score Oxy tried pass after pass, but with little success, except on one occasion. Tech drove the ball deep into the Tiger's territory on several scoring attempts, but the courageous rivals tightened up each time they were in a hole after the first touchdown. But that was about all Oxy could do. Even the fast-moving Glover found himself ineffective against the fighting Beaver line, which filtered through all the offensive combinations that could be produced against them. The Engineers proved their ability to hold like a stone wall against a team which outweighed them five pounds to the man.



Away for a Long Gain

F O O T B A L L

"Talking Sam" Eastman
told whoppers, but made better
end runs.



Although Tech was in danger but once, the whole game was full of thrills, and the outcome was in the air until the final whistle blew. In the fourth quarter the big thrill came when Tech lost the ball on downs in Oxy's territory and Johnson completed a pass to Reed, who raced thirty-five yards in a clear field toward a touchdown. It was then that "Hot Shot" Bennett made the biggest play of the day by closing up on the Oxy ten-second man and nailing him on the 17-yard mark. Here was Oxy's chance. The Engineer line held magnificently and the Beaver backs guarded all Occi-

dental pass receivers so effectively that the Tigers lost the ball.

To mention the stars of the game would be to mention the whole team. Watson, Dickey, Eastman, and Bennett showed all-conference style. On the line, Hayes and Crawford turned the Oxy backs in time after time, and together with Bill Shuler filtered through and nailed the Tiger backs before they could move.

That the best team won is evidenced by the fact that Tech made 16 first downs to the Tiger's 10 and knocked down 12 of Oxy's 21 pass attempts.



Watson Hits the Line

FOOTBALL



Ed Crawford never failed on the line.



"Fainting Phil" Craig, was the terror at center.

CAL CHRISTIAN

Following the hard-fought U. C. L. A. game the first lineup took a week's rest and watched the second string beat the Cal Christian Panthers by a 26 to 6 score. The brightest moments of the afternoon were furnished by Captain Dickey who lead the second string backfield in several broken-field runs. With the Oxy game in view, the Fox limited the plays to straight football, which fact did not seem to handicap the advance of the ball.

Tech scored twice in the first quarter and twice again in the third period. The second string held well against the Panthers except for a few minutes in the second quarter when the visitors slipped over a touchdown. Players and fans will remember the humorous episode

enacted by Bruderlin, who, after taking out half the opposing team, couldn't resist diving for the referee.

During the week Tech took stock of the conference standings and prepared for the big game with Oxy the following Saturday. The outsiders began to scratch their heads at the season's results which placed Tech at the top with two victories. San Diego stood next with three wins and one defeat at the hands of Whittier, while Occidental was third in the race with two victories and a defeat by San Diego. With the three hardest games of the year before them, the team worked hard during the following week to the tune of "If I Had a Daughter," while the student body roared "Beat the Tiger."



Sammy Wiggling Through

FOOTBALL



Kedric Keeley,
alert and
quick.



Randall Maass
"turned them in"
at end.

STANFORD

With the Occidental game successfully over, and only San Diego between them and the conference title, the team cheerfully boarded the train for Palo Alto to meet the squad of Coach Stanton's old friend, Pop Warner. After a delay at Santa Barbara to allow for the ejection of two Tech rooters found under the berths by the brakemen, the team arrived and worked out in the big Stanford Stadium.

On Saturday the Engineers put up a valiant fight against a far heavier and stronger team, to lose by a 7 to 57 score. In the first quarter after several exchanges of punts between Watson and Rintala, Craig, the Beaver center, intercepted a pass which put Tech in a favorable position until the second quarter. Stanford opened the second period with a hard

fought touchdown, and Craig blocked the kick for the extra point. Score: Stanford 6, Tech 0. Watson received the kickoff and on the next play broke through tackle for a twenty-three yard gain. After an exchange of punts Tech got the ball on her own 45 yard line. The next play was the highlight of the game. Eastman, on a lateral pass, found a hole and showed his heels to the whole Cardinal team in a thrilling 55-yard sideline run for a touchdown. Tech was leading, 7 to 6. From then on Stanford resorted to passes, and both sides used their substitutes, giving the Cardinals a distinct advantage. On the home trip the team set its mind on the championship game with San Diego, with the exception of "Farmer" Hayes, who experimented with the emergency bell cord, and stopped the train.



Sammy for a Touchdown

FOOTBALL



"De Wolfe from de door" Murdock,
was Tech's mainstay at guard.

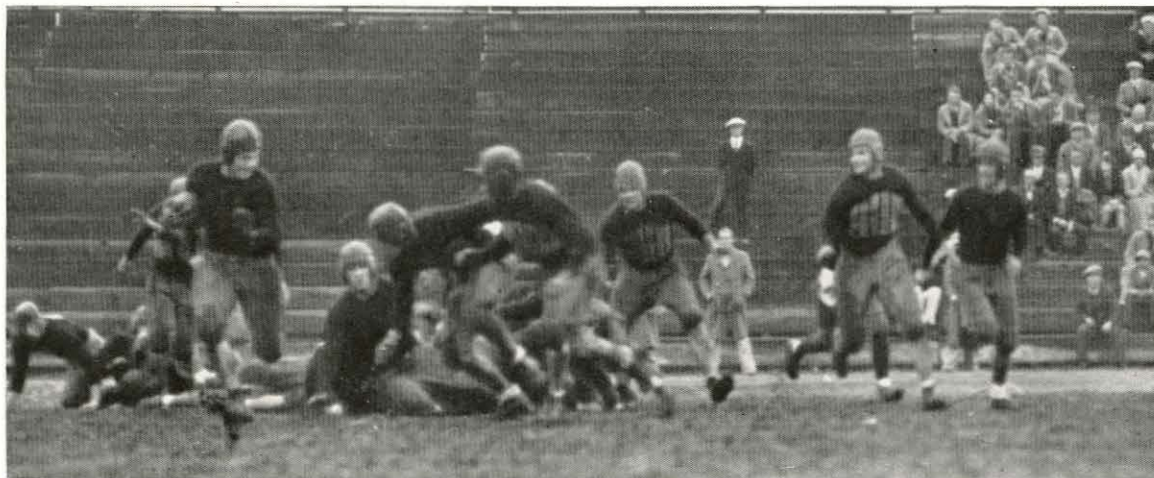
SAN DIEGO

In a thrilling game under lowering skies and on a muddy field Tech's fighting football team won the Conference Championship by defeating San Diego State 20 to 0 on Thanksgiving Day. Our deceptive passes and the precision of their execution, coupled with the splendid headwork of Quarterback Elliot Bennett spelled disaster for the Aztecs. This decisive victory gave Tech its first Southern Conference Championship in football and rendered Whittier's tardy claim to the title null and void.

Although it played on a muddy field, the team functioned perfectly for the full sixty minutes and showed completely the effect of Coach Stanton's cleverness and coaching power. With tricky laterals and unexpected line bucks, the Engineers held the upper hand

throughout the entire game, and rolled up ten first downs to the Aztecs' five. Tech made 200 yards in scrimmage to the Stater's 65, and made 53 yards in four passes against the Southerners' 15 yards in nine attempts.

Neither team scored in the first quarter, although the ball was kept in San Diego territory. In the second quarter the Tech team marched down the field with a lateral and forward passing attack. The prettiest play of the day came when Watson, on a lateral from Bennett, dropped back and tossed a perfectly timed pass to Eastman, who caught the ball on the dead run and ran to a touchdown. Dickey converted. Another steady drive with line bucks, and runs, and off-tackle plays enabled Watson and Dickey to go over for another



Dickey Around the Aztecs

F O O T B A L L

"Foggy" Sam Johnson was dazed but never down.



touchdown behind the smooth working Tech line. Dickey's conversion made the score 14 to 0. In the third quarter the Aztecs made their only threat by working the ball to Tech's 35 yard line after blocking a punt. The Beaver's stone wall line held, however, and enabled Dickey to go around end on a tricky lateral pass from Watson for the third touchdown in the final period.

In rewarding Tech as a whole, and Coach Fox Stanton for his long and earnest work with the squad, six seniors played their last game for their Alma Mater by winning the Championship. The whole conference recognized the six men: Captain Walt Dickey, Sam Eastman, Elliot Bennett, Tom Crawford, Ross Morris and DeWolfe Murdock. In the all-confer-

ence team, Captain Dickey, Crawford, Shuler, and Hayes were listed on the first string, and Eastman and Bennett were given honorable mention. Bill Shuler was chosen as the most outstanding player in the conference, and received the University Club award. Four of the men receiving the gold footballs, including Hayes, Shuler, Dickey, and Watson were given honorable mention on the All-American team. Too much praise cannot be given to the other members of the squad who brought home the conference pennant. Led by next year's captain, George Watson, many of them will work under Coach Fox Stanton to show the world that Tech's teams are clean teams, fighting teams, who play for the sport of the game.



Over the Line



F O O T B A L L



Boyle Dames Hutchison Claussen Groat Hall Keeley Schuhart Hunter
 Coach Gottschalk Bender Moore Secord Miller Polk McFadden Lyon Hess Coach Folsom

SCRUBS

Although the varsity squad placed Cal Tech at the head of the conference league with all wins and no defeats, it took the scrub team under the skillful coaching of Gottschalk to put them in a fighting trim. Incidentally, all of the credit for the victories goes to the varsity players, while little or no attention is paid to the scrubs, the veritable under-dogs of football, who are out each afternoon and evening during the season learning new signals, running new plays, and in every manner of means showing the varsity regulars how to win their games. The fellows who take part in this super-human effort to round the Alma Mater's team into shape receive at the end of the season football sweaters carrying a small "T" with an "S" over it to denote their attachment to the scrub squad.

This year finds a great number of sophomores on the scrub list. Bender and Dames performed well at the ends; Hunter, Hess, Shary, and Secord gave good accounts of themselves in the backfield; while Bamberger, Tillman, Hoffman, and Pickett (promoted to the varsity squad) offered plenty of resistance to

opponent line men. Among the juniors; Schuhart and Kuykendall played at the ends; Hutchinson, Lyons, and Pownall were tackles; Alden and Cravitz, linemen; and Groat, Miller, and Polk were in the backfield. The junior class had some very good material out as indicated by the promotion of Schuhart to the regulars at mid-season. Both Hall and Keeley, seniors, will be lost to the football squad due to graduation. Several of these men look like good material for Stanton's varsity squad for 1931, and they undoubtedly will give keen competition to the regulars from last year for places on the first string.

It seems as though the more punishment the scrubs receive, the more they want. One can consider himself very tired indeed, when he can say that he is as tired as a football scrub. Although considerably improving their ball-playing technique and individual physical conditions, their greatest value is evidenced in tuning the varsity eleven up to the "qui vive" point. No amount of praise or backslapping would be half enough for this ever-fighting, never-quitting squad.



TROPHIES



TROPHIES

The Wheaton Trophy, one of the most highly prized awards, is offered each year to the football player adjudged by his teammates as the man who most nearly complies with the qualifications essential to the winning of the trophy. Quite in keeping with the spirit of the championship team, Walter Dickey, captain of the conference winners, was picked by the fellow members of the football squad this year to have his name engraved on the base of the beautiful cup. The cup was first presented to the student body at the close of the 1924 football season by Mr. Wheaton of the T. V. Allen Company of Los Angeles. His enthusiastic efforts and ardent desire to further interest in intercollegiate sports prompted him to make this valuable addition to the list of awards annually presented to men earning them.

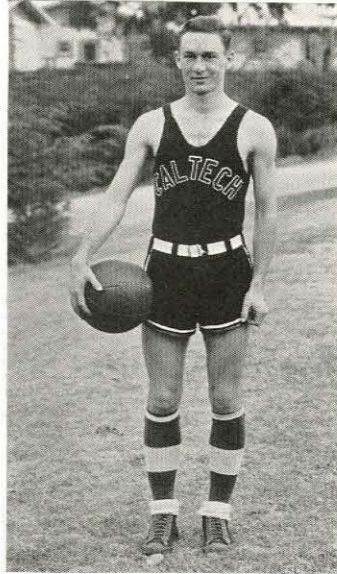
The Rawlings Trophy is to baseball, what the Wheaton Trophy is to football. This beautiful silver cup supported upon a tripod of baseball bats was presented to the Institute by the Rawlings Company of St. Louis in order to create and foster interest in America's great national sport, baseball. Typifying the highest ideals in Tech athletics, two men, Lester Boyle and Richard Pritchett were chosen by their

teammates as co-recipients of the eagerly sought after award. Their names will be engraved on the cup and will insure them of high-recognition by fellow students for their sportsmanship, moral influence on the team, and their playing ability. These two men were members of last year's baseball team, and it is impossible at the date of publication of the Big T to present to the student body this year's winner of the trophy.

A new trophy was captured by a quintet of snow and ice stars at a tri-collegiate meet held at Big Pines last winter. The team which defeated Oxy and Whittier to win the award was composed of Skoog, Wherritt, Hayes, Burman, and Skardoff. Folke Skoog was the high point man, winning firsts in the dash and distance ski events. It is hoped that the addition of this trophy to the Institute's collection will excite interest among the students to form annual winter sports teams in order to retain the championship title.

Although Tech won the football conference championship, the cup usually turned over to the winning college was not forthcoming. Occidental College has the cup at the present time, the status of which is still very much up in the air.

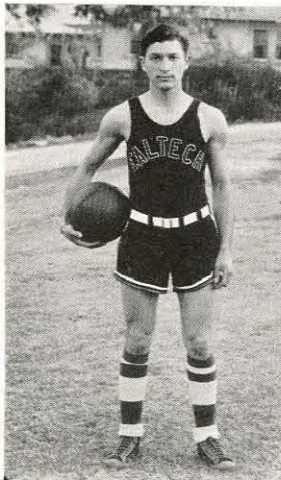
BASKETBALL



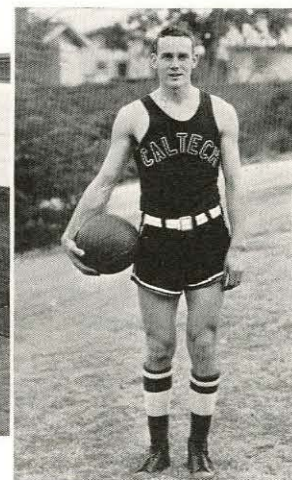
Captain Pratt

Phenomenal improvement in team co-operation and efficiency distinguished this year's basketball squad. Despite the fact that the Institute has not a gymnasium or court of its own and that only a comparatively few men show any interest in this sport, a discouraging record of several years' standing was broken when Tech trounced Pomona to win a conference basketball game. There are several reasons for the team's earnest endeavor to forge her way to the apex of the league, although the final count shows that Tech has seven de-

feats and one win to her credit out of eight conference games. The eagerness of the men out for the team berths resulted in a neck and neck competition between the lettermen and the new comers. The resulting winners of positions on the first and second strings of the squad indicated that Tech might become the "dark horse" of the league and upset pre-season dope. Of the twenty odd men out for basketball, only five of these were lettermen. Captain Lee Pratt, Oaks, Lani, Cogen and McLaughlin. Those eager to intercept forward



Cogen



McMillan

BASKETBALL



Coach Crosby

positions were: Labory, Parsons, Groat, Moore, Bamberger, and McMillan; centers, Crawford, Claussen, and Hoffman; and guards, Arnerich, Prior, Robinette, Clark, and Craig.

The Engineers' new basketball coach, Hiram Crosby, as the latest addition to the coaching staff, has made himself well liked not only because of his thorough knowledge of basketball tactics, but also for a striking personality which has won for him the esteem and good friendship of the players and all others who have come into contact with him.

An acknowledged authority on basketball and other sports, Crosby has displayed good foresight and excellent decision in placing his most capable men in positions most certain to be of the utmost advantage to the team as a whole. Having graduated from Dartmouth, and having coached both football and basketball teams throughout the Southwest, Coach Crosby came to the Institute after the first conference game to take over the not over-encouraging fortune of guiding the Beavers through the rest of their schedule.



Crawford



McLaughlin

BASKETBALL



Ready!

Changing boats in the middle of the stream is a tough job, but Coach Crosby's efforts toward producing a fighting and efficient quintet has been highly successful and was recognized in the clearcut and definite improvement in the playing qualities of each man.

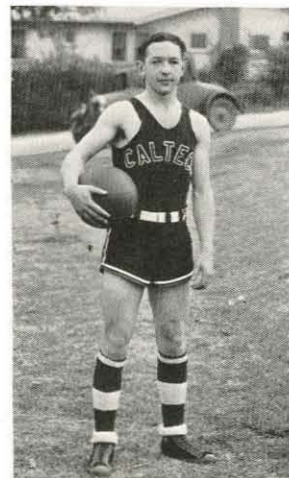
Inability to function properly and inaccuracy in basket-shooting resulted in Tech's dropping the opening conference tilt to San Diego by the lopsided score of 29-16.

Pratt acquitted himself in excellent fashion, and Oaks, Lani Cogen, and Hoffman, the other members of the initial line-up showed considerable possibilities in their initial game. The Tigers passed the sponge to Tech when in the Beavers' next casaba wrangle, Oxy outplayed and outshot Tech to the tune of 45-22. This discouraging score, among other things, indicated that the Engineers failed to make their numerous shots count, for an eyewitness of the contest calculated that the Engineers made twice as many attempts to score as Oxy did, but wild and inaccurate shots accounted for the reverse ratio tallies.

A week later found Tech again before the Oxy quintet making up for their wild basket shooting and slow footwork, and narrowly missing a defeat over their old rivals. Pratt let loose of himself that night by sinking enough baskets to garner thirteen points of the 26-35 score. Coach Crosby deserves a goodly share of the credit for the team's "never say die" spirit. Building up a real basketball team is

no easy matter, but Crosby's consistent efforts to teach the Beavers the three "R's" of basketball seem to have had a gradual, if not a spontaneous effect.

By dropping the fourth contest to Whittier Tech's hopes for league honors dropped a few notches. The playing of the Poets and the resultant score of 32-23 indicated a hard-fought battle on the part of Tech against a superior team. An excellent start was made by the Engineers when Pratt and his cohorts rolled up an easy lead in the first few minutes of play, but the Whittier coach quickly retaliated by sending in a string of six-footers.



Lani

BASKETBALL



Coach Crosby Lani Oaks Arnerich Johnson Groat Labory Parsons Bamberger Manager Buffum
Clark Hoffman McLaughan Pratt McMillan Crawford Moore

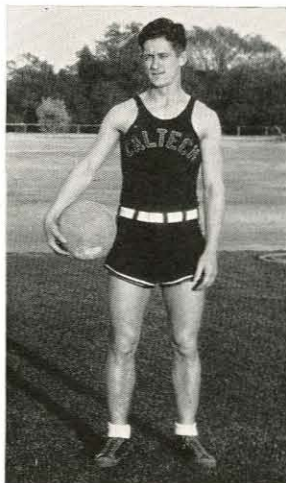
Tying the score six times in the last half of the fastest and most furious game in years, the Engineers won from Pomona 33-31, their first conference game in three years. Spectators will long remember the arduous efforts of Watson, Pratt, and McMillan to increase the score of the home boys and help defend their goal from being plugged by Pomona. Every Tech player shone out on that floor. It was a gala affair, and Tech not only broke a long standing jinx, but left the cellar positions to Santa Barbara and Pomona. The game was on an even footing throughout the evening, with Watson and Pratt vying for high

point honors. Fighting to keep their newly turned leaf clean of defeats, Tech fell before the onslaught of LaVerne. Had not Watson and Pratt been called out on fouls, the 34-24 score in favor of the Leopards would undoubtedly have been reversed; nevertheless a game lost is another defeat, dropping Tech back into the cellar again.

Last year's champions, Redlands, took a stronger grasp on first place when Tech succumbed to their superior opponents by a score of 34-27. McMillan worked well at basket filling, for his total of points for the game was fifteen. Pratt and Crawford helped to round out the score despite a fast and furious Bulldog offensive. Although the Beavers rallied in the second period to tally 21 against 16 for Redlands, the lead established earlier in the game by the Bulldogs was sufficient to prevent the Engineers passing them up.

The last game on Tech's schedule, that with Whittier, put the Beaver cagers definitely in last place. Falling before the onslaught of the Poets by a count of 35-13, Tech valiantly tried to hold back this quintet of giants to no effect.

Seven of the cagers were honored at the close of the season when the student ex-committee voted sweaters and numerals to Lee Pratt, captain; Ed Crawford, William Cogen, Leslie Lani, Jim McLaughlin, John McMillan, and George Watson. The other members of the squad were heartily commended for their skill and work on the team.



Watson

T R A C K



Captain Graff

During the first few weeks of the winter term a large squad of promising track prospects grew up. These men were beginning to round themselves into shape for a long hard season to come. Pre-season appearances for a fine team were excellent for there were many returning lettermen from last year's squad and a fine crop of sophomores who showed promise of capably filling in most of the gaps in the team. Prominent among the returning stars were Captain Don Graff, Bill Shuler, Folke Skoog, Chick Jones, Ben Holzman, George

Watson, and Eddie Mathews. In addition the following sophomores looked great: LeRoy Osborne, Art Downie, Louie Goss, and Joe DeMilita.

A real fighter and a fine product of the Fox's excellent coaching is Don Graff, captain of this year's track team. Starting out as a fair sprinter with some promise in his frosh year he has shown consistent improvement throughout his three years of varsity competition and now winds up his career of collegiate sport recognized as one of the best sprinters the Southern

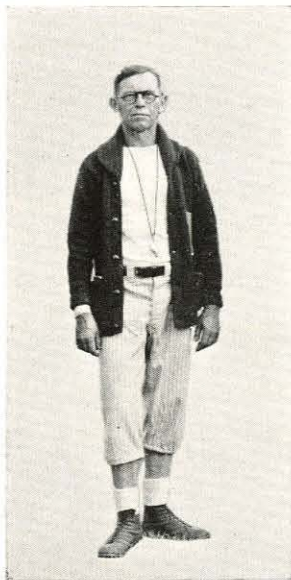


Osborne



Skoog

T R A C K

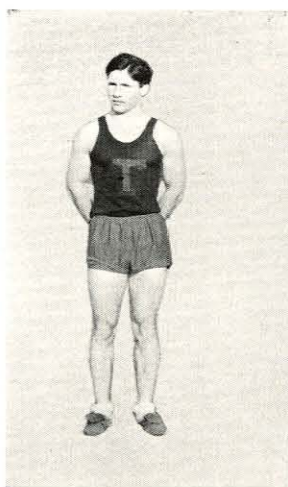


Coach Stanton

Conference has ever had in its ranks. He has justified his selection as captain in every way and his place on the team will be an extremely hard one to fill next year. At all times has he commanded the respect and admiration of his teammates and instilled much of his spirit and determination into them. Although of a slight build, he has come onto the track after a hard two-twenty to step the final lap of the relay for his team and covered the distance in excellent time to show what

grit really is. In a practice meet with Compton Junior College the Beavers emerged on the short end of the count although many men showed fine stuff and indicated that they were to be heard from in the future. Finally getting into stride in another week, the Engineers swamped Glendale Junior College, demonstrating a well-balanced squad of fine performers.

With these two meets under their figurative belt the entire squad travelled out to Pomona



Holzman



Hayes

T R A C K

to engage in the first annual Southern College's Relay Carnival. Everyone entered in some event or relay and when the medals were given out at the end of the day it was found that Tech had taken the lion's share. No official score was kept, but unofficially it was determined that the Beavers had emerged second only to Occidental. Bill Shuler was the "hot shot" of the afternoon, carrying off firsts in the discus and javelin and second place in the shot. Captain Don Graff showed that he was to be reckoned with later on when he turned in a 22.4 second lap in the half-mile relay to bring his team in third in that event.

In the first collegiate dual meet of the season the Engineers showed a world of fight and ability to scare the Uclans out at Westwood severely but emerged the losers by a score of 73-67. The whole team did splendidly and showed what could be expected from them in the Oxy meet which was to come the following week. Graff, Shuler, Skoog, Jones, and Osborne were the outstanding performers for Tech and accounted for some fine times and marks. Graff's two victories over Chuck Smith of the Bruins in the dashes constituted considerable of an upset of the well-known dope bucket, both times being fast. Jones cleared 12 feet 6 inches in the pole vault for the first time in his career while Shuler tossed weights amazing distances. Skoog's Swedish spirit and stamina won firsts in both the mile and the half and his fellow leather-lung, Osborne, ac-

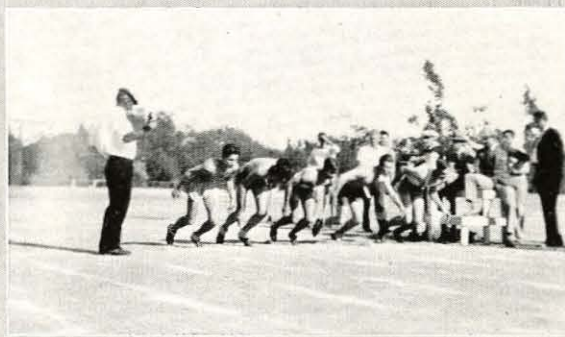
counted for a second in the mile and later went out and won the two-mile event.

Starting with resolve to "do better in the Oxy meet than I have ever done before" our cinderpath artists battled on even terms with a powerful aggregation from Eagle Rock in the first conference meet of the season but finally lost the encounter through the lack of a sufficiently capable relay quartet. Great duels in the sprints were put on between Belman of Oxy and the Beaver captain, Don Graff. Graff took the hundred by the proverbial hair in 9.8 seconds while Belman came from behind in the furlong to win by a scant yard in 22.2 seconds. Folke Skoog again ran off with both the mile and half, while Shuler's weight tossing netted us plenty of points. Bob Smith, Pickering, and Osborne had an easy time of it in the two mile, finishing it in the order named. Millard (Legs) Barton stretched himself just one-quarter of an inch farther than Don Main of the Bengals to annex the broad jump and finished third in the low hurdles.

Although the Engineers slumped a little in their performances following the hard Oxy meet, they found but little difficulty in "Taking down" the Whittier Poets 74½-65½. In spite of the efforts of the dusky Nate George, who defeated Don Graff of the Engineers in both dashes, took second in the four-forty and broad jump and ran anchor lap on the purple relay team, Tech's superior strength in the weight events could not be offset. When two



Smith



Goss

T R A C K

poet sophomores, Space and Baker, ate into our expected points in the distances by victories in the half and two-mile events, Engineer supporters had visions of defeat, but at this point Barton got his long limbs into action and romped off with a splendid victory in the low hurdles. This upset, along with Jones' victory in the pole vault, made up for our loss in the distances. It need hardly be mentioned that Shuler grabbed off lots of points as that is his usual practice.

Exam week played havoc with the Tech track artists, resulting in a 75-65 defeat at the hands of the Bulldogs from Redlands. Folke Skoog started things off with a bang to take the mile from Miller, while Osborne was given second place following the disqualification of the Redlands star. In the half, however, both Miller and Wilson crossed the line in front of the Swede to give Tech her death blow. Rabun of the visitors was the outstanding competitor of the meet, taking high point honors with firsts in the high jump, and four-forty, and broad jump, a tie with Graff in the two-twenty and a fine lap on the winning relay team for a total of twenty and one-fourth points. Competing in his last meet before leaving for Europe on the Travel Prize trip, Chuck Jones sailed over the bar a winner in the pole vault. Bill Pickering, another travel prizier, ran a fine two mile but encountered too stiff opposition and failed to place in his final race this season.

After a week of vacation the Beaver trackmen entrained for Santa Barbara to engage the Roadrunners in a trackfest. After allowing us to sit around in the hot sun for awhile, the teachers put in an appearance and the orgy began. Running on a soft track, Skoog turned the mile in 4:38 to win easily with Osborne following him across the line. Nearly all the events went the same way with Santa Barbara annexing but two first places, the pole vault and the high hurdles. Tech even won the four-forty and the relay to round out a perfect day. When all was said and done, the score stood 107 $\frac{1}{3}$ -32 $\frac{2}{3}$, about the most decisive victory registered in Southern Conference affairs for many a year.

By breaking into Tech's usual high point total in the weight events Pomona College scored the most decisive defeat administered to the Beavers this year. With Dew and Somfield taking first and second in the hammer and other blue-clad athletes picking up the second and third places we were forced to be content with sixteen points (all Shuler's). That famous trio of Hunt, DeSilva, and Kupfer swept both hurdle races to aid the Hens in amassing their large total of 90 digits.

In the flat races Tech battled on even terms. Barton in a new role of a four-forty man ran a splendid race only to be nipped at the tape by Pomona's ace, French. Skoog covered himself with considerable glory by winning both the mile and the two mile, followed closely



Cogen



Downie

T R A C K



The Squad

in both races by Osborne. In the sprint, Captain Don Graff was so angered by his narrow defeat in the hundred at the hands of Pomona's recent find, Raney, that he gave no quarter in the two-twenty and tore into the tape well in advance of the field.

In the All-Conference meet the following week, Shuler wound up his record-breaking season with a new mark in the shot at 45 feet 11½ inches. Incidentally he also captured second place in the javelin and a third in the discus. Skoog and Osborne ran a fast mile to place first and third, both times being under 4:30. Skoog's time was 4:27 flat, a new school

record and only 2/5 second behind the Conference mark. He also took a strong second in the two-mile. Captain Don Graff was set back again in the hundred but stepped right out to place third and later on annexed another third in the furlong. Holzman wound up in fourth place in the hammer throw behind Pomona's strong trio.

The following men earned a varsity letter in reward for their splendid work and performances this season: Captain Graff, Shuler, Skoog, Osborne, Barton, Holzman, Jones, Hayes, Downie, Goss, Prior, Watson, Mathews, and Bob Smith.



Barton



Jones

T R A C K

COLLEGE RECORDS

EVENT	HOLDER	RECORD	YEAR
100 Yard Dash	Schultz	9.7 sec.	1927
220 Yard Dash	Schultz	21.3 sec.	1927
440 Yard Dash	Lynn	51.3 sec.	1926
880 Yard Dash	Skoog	2 min. 0.2 sec.	1931
One Mile Run	Skoog	4 min. 27 sec.	1931
Two Mile Run	Keech	9 min. 52.2 sec.	1924
120 Yard High Hurdles	Pomeroy	14.8 sec.	1926
220 Yard Low Hurdles	Perry	24.4 sec.	1929
High Jump	Perry	6 ft. 1 in.	1928
Broad Jump	Kircher	22 ft. 4 $\frac{3}{4}$ in.	1928
Pole Vault	Graham	13 ft. 2 $\frac{7}{8}$ in.	1925
Hammer	Moyse	146 ft.	1925
Shot	Shuler	45 ft. 11 $\frac{1}{2}$ in.	1931
Discus	Shuler	140 ft. 11 $\frac{1}{2}$ in.	1931
Javelin	Hoover	189 ft. 11 $\frac{1}{2}$ in.	1926
Relay	Meserve, Pomeroy	3 min. 25 sec.	1926
	Schultz, Lynn		



Watson



Shuler

B A S E B A L L

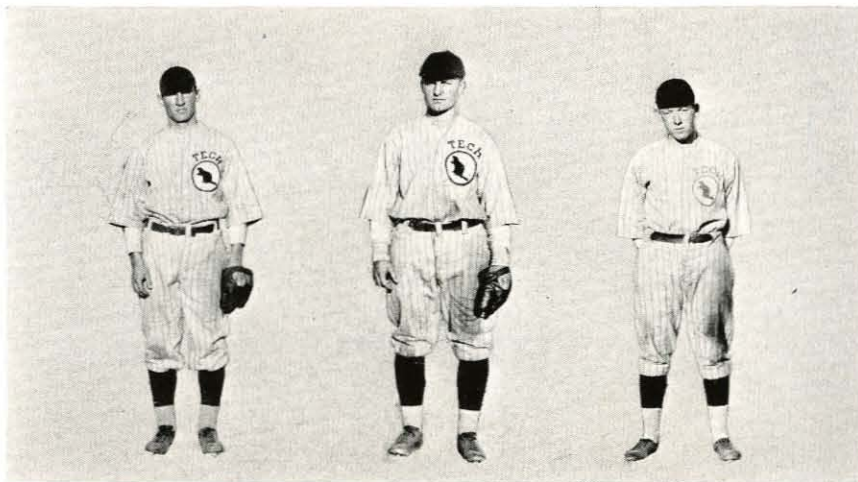


Captain Wineland

With over twenty-five men out for baseball this season, the possibilities of organizing a good Engineer nine are great. Out of eleven practice games, Cal Tech has won five, tied one, and lost five; which is not an over enviable record. However, the games played were of short duration, most of them five innings, and the score book indicated that Tech was just getting into her stride when the games were called on account of failing light.

On the pitching staff are to be found Wine-

land and Bell, capable right-hand twirlers who have performed well in the pre-season games. Working under Coach H. Z. Musselman, Jeff Wineland, this year's captain of the team, heads a list of 18 eligible members of the baseball squad. Of the eleven lettermen of last year, Wineland, McMillan, Pratt, Dickerman, and Green are returning. Other men out for team berths include Iwasaki, Russell, Spicer, Hall, Byrne, Craig, Cordes, Merrithew, Spade, Hatcher, Hegardt, Crawford, and Bell. Those



Pratt

Craig

Green

B A S E B A L L

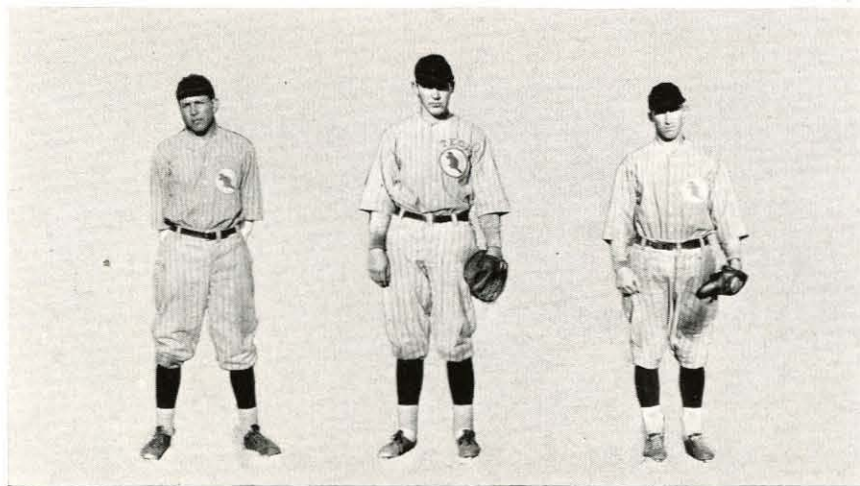


Coach Musselman

sophomores who will bear watching and have shown up well on the diamond are Craig, Russell, Spade, Byrne, and Spicer. A typical lineup of first string men is: Wineland or Bell, pitching; Green or Hall, at catching end of the battery; Russell, at first base; either Pratt or Dickerman, holding down second; at third, Spicer; McMillan alternating with Craig at short stop; Iwasaki, center field; Byrne, at right; and Cordes, at left field.

trouncing Pasadena Junior College 7-2 in the opening game. Wineland pitched the game and allowed but one hit. Although Russell managed to knock the pellet out of the lot for a home-run in Tech's next game, Glendale Junior College walked over the home team with a win 8-2. Wineland pitched Tech's next game with the Pasadena High School, whose team garnered eight hits off him. However, close playing by the infield men, found the Engineers on the winning end of the 7-4 score.

Tech started her practice game schedule by



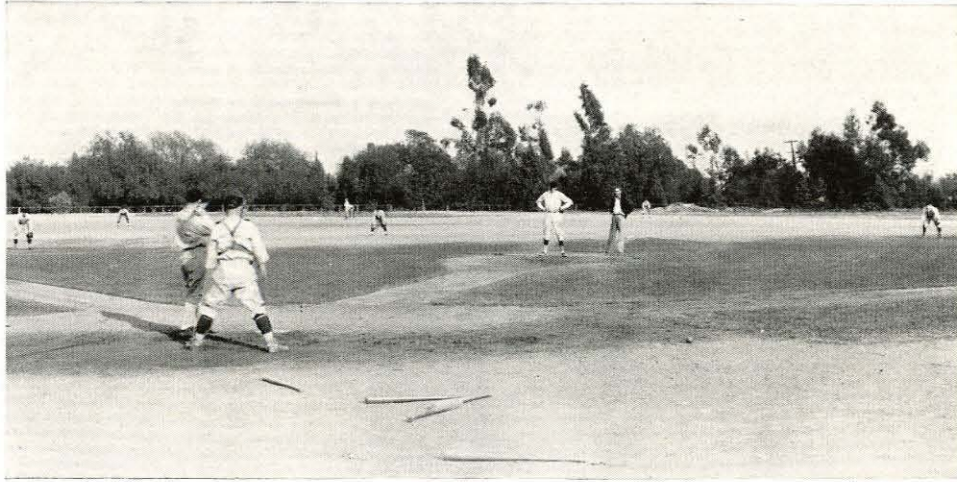
Bell

Hall

Spicer



BASEBALL



Batter Up!

The second game to be played with Pasadena Junior College resulted in the visitors evening up the score by a 6-5 win over the Beavers. The Bulldogs collected eight hits against Tech's six, one of which included a home run by an Engineer fielder, Byrne. Bell held the Citrus Junior College to a tie in the next contest in which the visiting team hit four times to the Beaver's three.

Superior playing and pitching helped Tech down Muir Tech, a Pasadena high school, in the next game which resulted in the lop-sided score of 9-1. Fullerton Junior College was the next victim to feel the sting of defeat, when the Engineers invaded her territory for

a 4-0 victory. Wineland allowed four hits which were not effective in bringing the junior college men home, because of the fast and snappy infield work of the Beavers. Tech's four runs were the result of eleven hits. The Institute's fortunes were reversed soon after by the Santa Ana Junior College nine, who gave the Engineers a trouncing by collecting thirteen hits and nine runs. Tech managed to get but four hits and three runs, making the final score 9-3 in favor of the victorious junior college players.

A third game with Pasadena Junior College proved Tech to have the better team, for the Engineers collected fourteen runs to defeat



Iwasaki



Cordes

B A S E B A L L



Schuhart Spicer Bell Hall Wineland Pratt Merrithew Coach Musselman
 Russell Green Spade Iwasaki Cordes Craig Dickerman

their opponents by the score of 14-8. Santa Monica Junior College came through in the tenth inning of her game with the Institute squad by breaking a tie and winning 5-4. Both teams got seven good hits apiece. Bell replaced Wineland, who had pitched a good game, in the tenth inning, but failed to stop the Monican rally. Compton Junior College journeyed to Paddock field and set Tech back 8-0 in the next game. Compton gleaned ten hits off of Bell and Wineland, while the Engineers could only hit the opposing pitcher four times. This game completed Tech's practice game schedule and the results showed that the Engineer players were improving.

The Beavers opened their conference schedule by playing the Occidental Tigers. The discouraging final score in favor of Oxy was a result of our errors and their hits. Although both Russell and Wineland hit home-runs, their contribution to the score only slightly swelled Tech's short end of the 17-6 score. Both Wineland and Bell took their share of the blame for Oxy's slug-fest and managed to strike out six of the players. The two hour contest proved Occidental's superiority on the diamond for that day. In all events the traditional Tech Spirit prevails: play the game and smile.

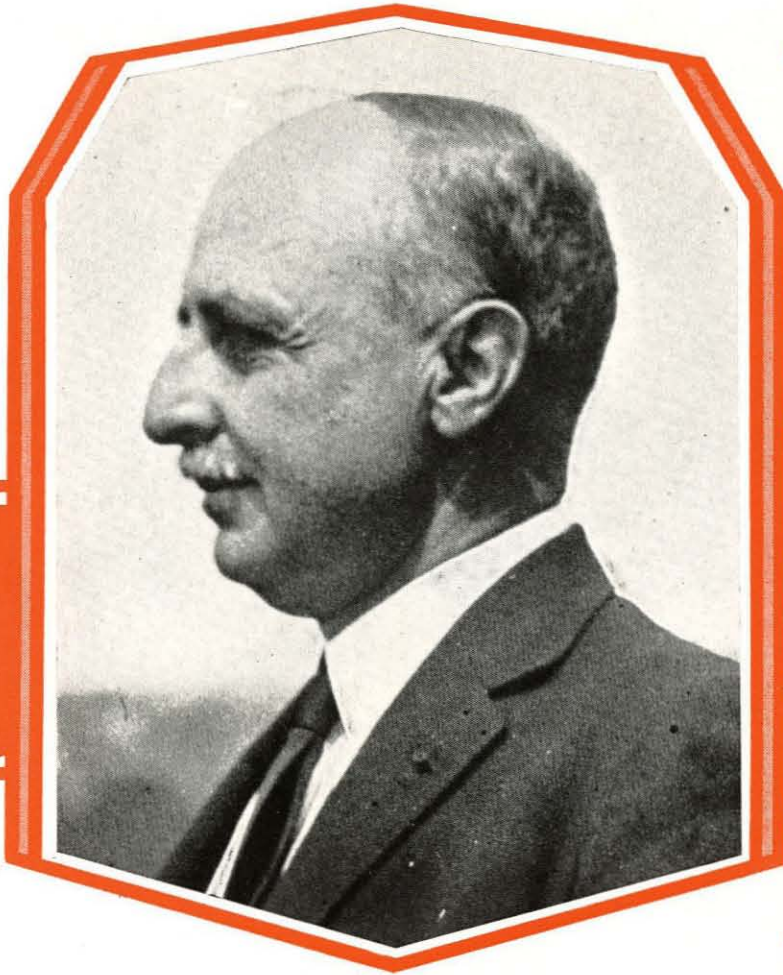


McMillan



Russell





LOUIS BLERIOT

French aircraft designer, and first to fly the English Channel. Prime factor in the maintenance of a sound aircraft industry in France.



MINOR SPORTS



They're Off

CROSS COUNTRY

When Coach Stanton issued his annual call for iron men to participate in two, three, and four mile cross country runs about seventy men answered the call. While Tech did nothing spectacular in the Conference run, the improved physical condition of the men who participated in this sport attests its true worth.

Being too far from the open country where men may run across fields, jump fences and follow winding paths, Tech sends her men meandering around the roads throughout the Oak Knoll and San Marino sections to the south of Tournament Park. While paved roads are a handicap to true cross country running, the ups and downs of these winding roads develop the endurance of the participants to a high degree and at the same time give them a first hand knowledge of the by-ways of certain exclusive residential sections.

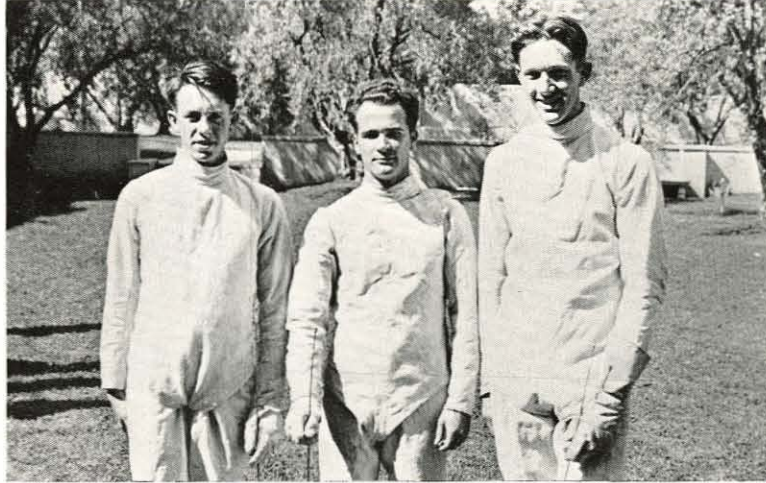
The annual Southern California Conference four mile run found Tech's representatives winding along the stone paths through the great unknown of the famous Pomona wash. The grueling event took the men twice around

the Pomona College track, on a large loop in the lower part of the wash through stones and brush, brought them back for two more laps around the track, sent them on another smaller trip through a section of the wash in proximity to the athletic field, sent them along the Foothill Boulevard, and then let them end with another round on the track.

The first five men finishing for Tech were Bob Smith, Nelson Harshman, Bill Pickering, John Detweiler, and William Bergren. With the absence of our distance king, Folke Skoog, no man on the team was outstanding, but the lessons of endurance in contest and of persistence have amply repaid the men for the work expended in grinding over the miles.

Cross country is a sport in which each man must show his individual prowess, but at the same time it takes a team of five men finishing sooner than any other five men to win a meet. While a sport, the principle of group spirit must be inherent in the group. Men who in a trial or contest together come out of the fray better friends in the end, be the man opponent or team mate.

MINOR SPORTS



Tarbet

Shockley

Fitch

FENCING

At the beginning of the first term Tech's fencing enthusiasts were busy, knowing that the success of any sport depends on the amount of work done and the fight of the players. They were fortunate in obtaining Mr. Paul Cape as instructor, and after changing the old military barracks to a fencing room, they started to round out a team.

Their efforts were rewarded, as this year can be marked down as the second successful season of the fencing team organized two years ago. The Fencing Club developed enough to enter matches last year with wonderful success. This year, with two of last year's men returning, there has been even greater success. A team composed of Fitch, Gregory, Shockley, and Tarbet has won every match entered so far.

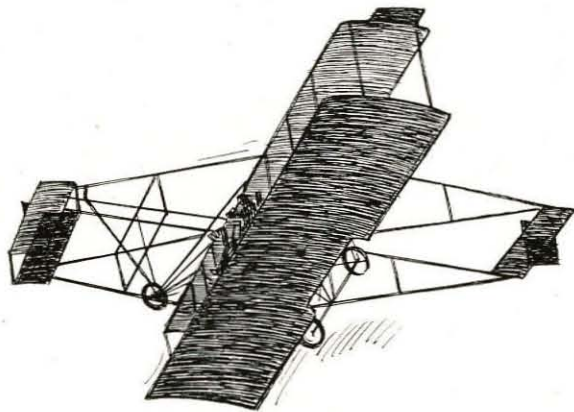
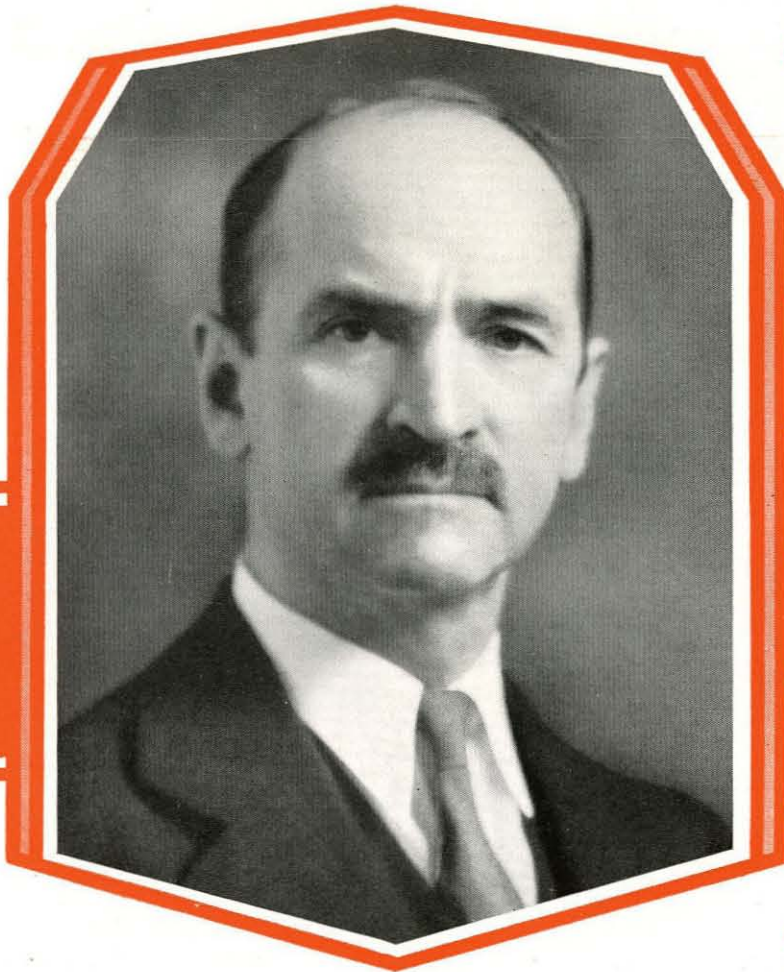
The scores so far this year are: Tech 5 to L. A. A. C. collegiate team 4; Tech 7 to P. J. C. 2; and Tech 6 to Pasadena Y. M. C. A. 3. Some of the most thrilling plays of the season came when Shockley in a match with L. A. A. C. turned a score which was 1-4 against him into a 5-4 victory with some excellent foil play.

Another of the fastest bouts of the season was with Dan Strebel fencing for Pasadena Y. and Tom Tarbet. Individual scores for the season thus far are: Shockley won 8, lost 1; Tarbet won 8, lost 1; Fitch won 1, lost 5; Gregory won 1, lost 2. Besides the matches already fought there are being arranged bouts with some of the Southern California colleges where fencing has become a regular sport and with Captain Duff's Fencing Academy in Hollywood.

Tarbet was the only man entered in the individual A. F. L. A. matches this year. Out of a group of about 35 of the south's best college fencers, and men who have continued fencing after their college career, he was able to place in the finals with five other men. However, he was not able to parry his way to the top as in last year's bout.

Hopes for the coming season are bright, as only Tarbet will be lost to the team, while Hartman and Pearson have been rapidly gaining form and will undoubtedly have almost an iron-clad defense as well as a speedy offence by next year.





GLENN H. CURTISS

Was among the first to make public flights in the United States and developed the hydroplane and flying boat in the United States.



FOOTBALL

INTRAMURAL SPORTS

Involving those who are interested in athletics, but are not in Varsity competition, intramural sports have for some time been an important part of the athletic life of Tech, giving many men an opportunity to engage in athletic competition who would otherwise be unable to do so.

In carrying out the program of intramural sports this year, a new system was inaugurated and found to be very satisfactory. Two managers, a senior and a junior from the student body, were appointed by Mr. Musselman and it was their duty to take direct charge of the intramural contests, thereby relieving Mr. Musselman of much of the detail work of preparing for the contest, arranging for scorekeepers, referees, etc. The managers were directly responsible to Mr. Musselman and all rules and orders were issued from his office.

In interclass sports, a new system of class managers was adopted and a very effective organization resulted. A manager for each sport was appointed by the class athletic manager and these managers worked with the intramural managers in conducting the interclass contests. New enthusiasm was worked up for each sport by having a manager interested in the sport and better class spirit and co-operation resulted.

The new systems on the whole have functioned very well in carrying out the purpose of intramural sports, resulting in a greater number of men taking part and a greater general interest.

Interclass football as usual brought out many participants and was watched by all classes. With the frosh drawing from a squad of good material and the other classes from a group of potential varsity men on the scrubs, many hot contests were staged and the games were not for the timid or the weak.

Under the able tutelage of "Napoleon" Mathewson, the sophomores walked off with first honors by winning three games and losing

none. Always the best team on the field, the sophomores ran up a total of 54 points and allowed their opponents none. They were led on the field of battle by Hunter, who time and time again stretched out his long elusive legs for considerable gains.

The juniors, captained by Sol Cogen, received second place by losing only to the sophomores. They presented a well rounded team, but could not compete with the drive and co-operation of the mighty sophomores.

The lowly frosh scored not a single point but were given third place because the seniors used ineligible men. The closest game of the series was the Senior-Frosh contest which ended 0-0 and was hard fought throughout.

The unfortunate seniors had to be content with last place and no points toward interclass standing because in two games other interests called some of their star performers and ineligibles had to be used. Most exciting was the Senior-Junior game in which the seniors drafted four frosh numeral men and swamped the juniors 20 to 0.

Although interclass Cross Country is relatively uninteresting, it is important because men for the varsity are chosen from the interclass competitors. Everyone is eligible for this sport, varsity men included, and more than fifty long winded, short-pantied athletes turned out for each of the three gruelling races. Courses of two, three, and four miles were marked out and the races were run a few days apart. Not a few of the less fortunate runners were lost en route, and, especially in the longer races, some men were to be found straggling in by the light of the moon.

Bill Pickering, doughty junior, proved his mettle by winning the two and three mile runs and tying with Bob Smith for first in the four mile. The times of 11:20, 17:14, and 24:47 were very good for early season running and indicated that both were to be heard from later.

B A S K E T B A L L



Sophomores

Intramural Basketball is engaged in by more men than any other sport and every afternoon for about six weeks games were played on the dirt courts behind the Aeronautics Building. The 120 men competing were divided into 13 teams which were classed as Fraternity, Graduate or Independent teams. The Fraternity League was composed of the five social groups on the campus; the Graduate League was composed of graduates in the Civil, Electrical, Physics, and Chemistry departments and the Independent League was composed of non-fraternity men who made up the four teams of Alley Rats, Wildcats, Wolverines, and Dorm Club.

Sentiment ran high in the Fraternity teams and many exciting contests were held. The Sigmas presented a smooth running organization and had little difficulty in winning first place, winning eight games and losing none. Other fraternities in order of percentage were the Gnomes, Gamma Sigma, Pharos and Pi Alpha Tau. Only two forfeits were made because of teams' absence and the spirit and interest on the whole was very good, especially considering that two rounds were held, each team playing each opponent twice.

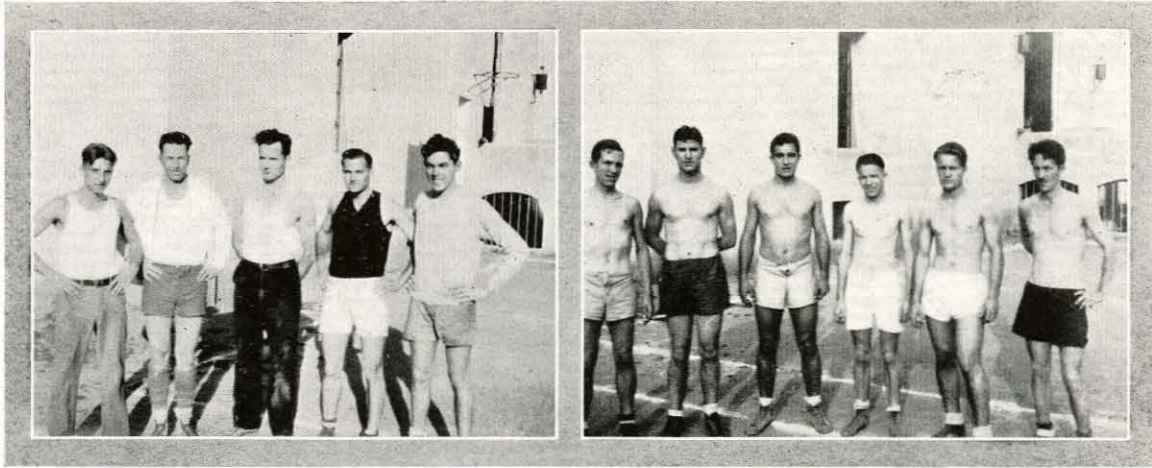
In the Graduate League, the men of the Physics department came out on top by win-

ning five games and losing only one. These supposedly old scientists showed that they had plenty of youth left and many hot and fast games were played. Although considerable roughness was in evidence, the only casualty was Dick Sutton's fracture of his arm. The Graduates entered into this quite whole heartedly, being one of the few means they have of engaging in competitive group athletics, and it is hoped that such a program will continue in the future. The other teams in order of percentage were Civils, Electricals, and Chemists.

Hal Roach and his "Gang" of Alley Rats cleaned up in the Independent League, winning six games and losing none. Due to the uncanny skill of Roach in finding the basket, the Rats' supremacy was hardly ever questioned, but some good battles were held to decide the other standings in the League. Hess's Wildcats and Claussen's Wolverines fought neck and neck and finally came out tied for second place with the Dorm Club bringing up the rear with zero percentage.

After getting considerable practice in intramural Basketball, about forty undergraduates competed for their respective classes in inter-class Basketball. Only one round was held, each team playing three games, and the final count found the juniors on top, having won

T R A C K



The Physicists

Sigma Alpha Pi

three games and lost none. The junior team led by Roach was practically the same as the Alley Rats and formed the same combination that was unbeatable in the Independent League.

The frosh team, composed of those on the frosh basketball squad who had not received numerals, was very much in practice and condition, and took second place, losing only to the juniors. Following the frosh were the sophomores, and then the mighty seniors trailed with no games won.

Two track meets are held each year before the varsity season begins, and from the results of these meets, men are chosen for the varsity squad.

The first of these meets was the interclass and it was very much of a novice meet because of the strict eligibility rules. Varsity lettermen were ineligible and sophomore numeral men and freshmen who were high school lettermen were not permitted to enter in the events in which they had made their awards. Despite the fact that it was the first meet of



The Alley Rats



B O X I N G



Keeley At Pomona

the season and the participants were inexperienced, some very good records were made and a good line on the men was obtained.

The juniors and sophomores as usual were neck and neck until the end of the meet, but the juniors finally won with a score of 57. Lanky "Millie" Barton was high point man with a first in the 220 low hurdles, the high jump, and the broad jump. Goss of the sophomores and Keeley of the juniors also turned in creditable performances, winning two firsts each.

After the dust cleared, the final score was found to be Juniors 57, Sophomores 52, Frosh 38, and as usual, the Seniors trailed with 35.

The Intramural Track Meet was held a week later and was almost solely for the purpose of determining the varsity squad. In this meet all men were eligible, varsity included, and the results on the whole were very gratifying.

Bill Shuler lived up to expectations and was high point man with 18 points from firsts in the shot, discus, and javelin, and a second in the hammer. Graff, Goss, and Skoog each took two firsts in their favorite events and all indications were that they would be heard from later.

A record was kept of the class of the men competing and it was found that the juniors had the most talent exhibited and gathered almost as many points as the other three

classes together. With these men to build a varsity around next year, track prospects are not at all dull.

Despite the limited facilities of the old brown shack, about twenty exponents of the manly art of self-defense kept dust and fists flying in the old building that serves as a gym.

Men were divided into four classes; 135, 145, and 160 pounds and unlimited, and several elimination bouts were necessary in each class except the unlimited.

In the 135 point class, Wilson, a junior, defeated fighting Don Rooke, frosh, who put up a good scrap, despite illness. In the 145 pound division Spade, sophomore, took the decision over "Savoldi" Lani, junior, in three rounds of fast sparring. The finals of the 160 pound class resulted in Kedric Keeley, junior, getting the nod over Switzer, frosh, who despite a good battle was better as a wrestler.

Eagerly awaited by the Student Body, the fight of the century was finally staged and decided the supremacy of the unlimited class and the Sigma Clan. In a bloodthirsty fracas that featured knockdowns for both men, "Red" Watson, junior, defeated "Big Jim" Keeley, senior, and thereby securely fixed his reputation as the school's best fighter. Watson took one on the chin that knocked him into the ropes for a few counts and then he came back and floored Keeley for his share of the counts.

S W I M M I N G



To the Death!

The fight was a close one, but Watson had a slight edge and seemed to be able to give and take better.

By winning out in three of the four classes, the juniors took first honors and gained another step in interclass standing. The showing of these men who participated showed that coach Sol Cogen has developed some good material and good bouts are promised for the future.

Interclass Wrestling was divided into four classes of 130, 145, 160 pounds, and unlimited weight. About 13 men turned out to engage in the ancient Greek pastime and under the watchful eye of "Porky" Cravitz, some very good men were developed.

In the 130 pound class Ralph Byrne, sophomore defeated Schwein, frosh, by a decision and then competed in the 145 class where he defeated Nies and then won over Maes in the finals by a forfeit. In the 160 pound class Gertmenian, frosh, defeated Switzer by a decision and then lost to Dickey, senior, competing in the finals of the unlimited class.

Very unusual indeed was the fact that the juniors did not even place men in the finals and let their foes, the sophomores, walk off with first place.

The Interclass Swimming meet held at the Pasadena Y. M. C. A. was one of the closest meets held for some years and nearly every event had its exciting moments. The frosh and sophomores, using only five men each, were on

even terms throughout the meet and not until the dives had been run off was the outcome decided.

Pat Hannay, frosh, proved to be the iron man of the meet, by winning the 100, 220, and 440 and then rounding off his afternoon by swimming a lap for his winning relay team. Mathewson for the sophomores and Gunderson for the seniors were men to be reckoned with and were instrumental in gathering points for their teams. Some very good times were recorded and the frosh particularly showed promise of big things for the future.

The meet was decided in the evening when only three men competed in the diving, two of them being sophomores. Entries were limited to one from each class so the sophomores were given only one place. Secord defeated Radford, frosh, to make the final score, Frosh, 29; Sophomores, 28; Seniors, 11; Juniors, 3.

Interclass handball, tennis and baseball were not completed at the time of writing so records of those sports and final interclass standings were impossible to present. However from the Interclass standings thus far, indications are that the Juniors are the strongest bidders and stand a good chance to have their name inscribed upon the perpetual trophy that is given for Interclass sports.

The Interclass standings to date were: Seniors $35\frac{1}{2}$, Juniors $113\frac{1}{2}$, Sophomores $88\frac{1}{2}$, and Frosh $71\frac{1}{2}$.

GOLF



Skaredoff On the Jump

WINTER SPORTS

Starting off her winter sports career in a big way, the Tech snow hounds brought back the perpetual trophy given by J. A. Meyers. Cal Tech's name is the first to be engraved upon the cup and we hope to see it duplicated next year.

Folke Skoog, our Swedish ski-hound, was the outstanding man in the meet. Not only did Skoog take first in the 100 yard ski dash and the 1 1/2 mile cross country, but he left the pro, who was supposed to lead the way. Skoog had time to finish, take off his skis, and walk down to the car before the Big Pines professional showed up.

Ed Hayes took a third in the junior ski jump. Two Whittier men, who had been using the Senior jump, easily took first and second. Bob Wherritt, manager of the group, ran up three points with a fourth in the dash, cross country, and ski jump. Burman and Scaredoff, who completed the team, expected to gain a few points in the ice events which were cancelled on account of the condition of the ice.

This meet was held as a feature of the Winter Sports carnival at Big Pines, January 30, 31, and February 1. The Los Angeles Junior Chamber of Commerce was kind enough to provide board and lodging for the contestants from the colleges. The final score was Tech, 15; Whittier, 13; and Occidental, 3.

GOLF

Golf became an organized sport in this conference for the first time this spring. The colleges having teams were Oxy, Cal Tech, Whittier, Pomona, and Redlands. All except Cal Tech were entered in the Southern California Intercollegiates at Bel-Air during the week of April 19.

Cal Tech scheduled matches with Pomona, Pasadena Junior College, Occidental, and Whittier followed by the all-conference meet on May 22 and 23.

At the present writing none of these conference matches have been played, but Tech is certain to have a team of first rank in this conference. Five men compose the team for the dual matches while four men represent the school as a team and as individuals on May 22 and 23. Men out for the team and who look promising are: Bob Oaks, Ted Jurling, Al Maes, Ed Watson, Robert White, and Carl Tutshulte.

Golf is a major sport in the Pacific Coast Conference, as is tennis and it is hoped that Tech and the rest of the Conference will give the boys who play the "old man's" game a break and make a major sport of it in the near future.

The Tech school spirit is always to the fore, and we know that the golf team will do everything to uphold the Tech traditions.





GUSTAVE EIFFEL

French engineer and scientist; designed the Eiffel Tower and maintained a very active aerodynamic research program on wing sections (airfoils) and complete airplane models.



FOOTBALL



Stanton Morris Norwood Dibble Boyle Chase Gertmenian Lutes Howland Bohem Coward
 Erickson Hannay Gregory Sharp Pearne Nicolson Radford Rooke Haight
 Everett Halgren Sieland Poladian Howard Wenzlaff

The Babes have done fairly well this year. Although at the bottom of the conference, they have played some very close games. Their hard, clean playing is the kind of which Tech is proud, although they seem to have a great inability to play more than one-half of any game as they really could play it.

The first game of the season against La Verne was the poorest of the year for the Tech Babes. Playing against heavier and more experienced men, and fighting stage fright for the first half was too strong a combination for the Tech frosh, and the La Verne men ran wild. In the last period the Beaver Babes came back strong and held the La Verne team on even terms.

Against Pomona the Tech team showed a vast improvement. This game was lost only through a trick of fortune. After being led eighteen to nothing at half time, the Beaver Babes came back and gave the Sagechicks the scare of their young lives, the final score being eighteen to twelve.

Friday evening of the next week our youngsters traveled to Whittier and dropped a close battle with the Whittier frosh. The Poets had one very good man, and that was the difference between the two teams. The final score was twelve to seven.

Against the heavy Army and Navy Academy team the Beaverlets played a slow game much

below their usual style. This was one game that the frosh should have won, although outweighed badly. The Cadets took home the bacon to the tune of twenty to six.

The frosh team played its best game of the season against our time-honored rival, Oxy. Starting with a bang the young Engineers swept the Tiger Babes off their feet and scored two touchdowns in rapid succession. Oxy came back strong in the second half and managed to squeeze out a fourteen to thirteen victory. It may be said for the hard-fighting Tech men that they were handicapped by injuries which occurred during the game.

The frosh dropped two post-season games, one to South Pasadena High School and one to Monrovia High School. The game with South Pasadena was especially close.

Johnny Pearne was the outstanding man on the squad. He always played a hard, heads-up game at center. The fact that he was elected captain is ample proof of the position he held among the players. The following men were awarded numerals for their work during the season: Pearne, center; Howard, guard; Gertmenian, guard; Switzer, guard; Gregory, tackle; Haight, end; Rooke, end; Radford, end; Hannay, full back; Sharp, quarterback; Sieland, halfback; Roberts, halfback; Morris, halfback, and Howard and Crutchfield, managers.

BASKETBALL



Kalliwoda Van Osdol Boykin Boche Musselman Haight Kidd Bohan Bushnell
 Lutes Roberts Cleveland Donahue Johnson Howard Cox Schreck

The developing of a winning frosh team is a very difficult task here at Cal Tech because of poor facilities and lack of both material and practice time. Coach Musselman is to be commended for the fighting teams that he puts out while overcoming these handicaps.

Although the team had a steady place to practice at the First Baptist Church of Pasadena, they had only a short month of practice before the first league tilt with Oxy. Because of the lack of practice, the team cracked in the last five minutes of play, after holding the lead except for one tie, up to this point. The score at half time was 18-18; and at the end Oxy 42, Cal Tech 30.

Against Pomona the team put up a thrilling battle. The lead see-sawed back and forth and the game turned into a battle of long shots and free throws, with Pomona commanding a lead just large enough to eke out a 25-23 victory. The team composed of Johnson, Kidd, Boche, Birdsey, and Haight played the entire game.

The same team played the entire La Verne game, which was also a thriller from start to finish. A last minute rally fell short by one point and La Verne won 26-25.

Hoping to break the jinx, Coach Musselman started the second string in the Redlands

game. The first string entered the game two points behind but failed to get started for the first time during the season. Redlands ran wild the first half and had a 20-4 lead at half time. Coming on the floor for the second period, the team, smarting under the words of the coach, put up a great battle. They failed, however, to overcome such a large lead. The final score was 33-20.

The second half of the Redlands game marked the return of Boche, who scored 11 points and lent some hope for the final game against Whittier. The team entered this game determined to win and put up a great battle. Whittier was leading at half time 12-9, but was not able to withstand the withering Cal Tech attack in the second half, and the team breezed to an easy 30-25 victory.

Bidsey, Boche, and Haight acted as captains in various games, with Haight being elected captain before the Whittier game. Although only six men, Captain Fletcher Haight, William Birdsey, Robert Boche, Lawrence Johnson, Ray Kidd, and Robert Bohan received numerals, a great deal of credit must be given to the other nine men that stuck it out and gave the first team good competition in practice. The other members of the squad were: Cleveland, Van Osdol, Howard, Boykin, Lutes, Roberts, Schreck, Cox, Bushnell, and Kalliwoda.

T R A C K



Coach Stanton Roberts Dietrich Jackson McClain Craig Romoli Gregory Douglas Morris Switzer Wyatt
Fomilyant Howland Mitchell Everett Sieland Sharp Sherbourne Kidd

With a slightly above average turnout of cinder aspirants, the frosh track team developed from a straggling group at the start of the season through the efforts of their coach, Layton Stanton, into a well balanced team that finished a strong fourth in the conference meet, a showing that deserves much credit. Out of the four conference meets entered, Tech won two, lost a third by only one point, and placed fourth in the all-conference meet.

Starting off the season poorly, the squad lost its first two practice contests with South Pasadena High, and Monrovia High by bad scores.

In the El Monte meet a sixty-eight to forty-five defeat looked more heartening. Tech at last had shifted from low to second; her sprint men warmed to action; Morris in the two-twenty, Wyatt in the four-forty, and Howland in the mile all broke the tape. Romoli scored the only first of the season in the broad jump, showing his ability in this event as well as in the hurdles and high jump.

The first conference meet was lost to Oxy by one point; another Tech man in the two-twenty and the score would have been tied. But the fates were not well disposed and so the results go down: Oxy, 70; Tech 69. Morris in the two-twenty, McClain in the eight-eighty, and Howland in the two-mile, and the relay team, consisting of Morris, Everett, Wyatt, and

McClain brought home the bacon on the cinders. On the field firsts were taken by Sharp, in the pole vault, Dietrich in the javelin, and Everett in the hammer throw.

After a practice meet with Lincoln High, much similar in results as the El Monte contest, the squad gave an excellent accounting of itself in the Redlands meet. Making a final score of eighty-two to forty-eight, the scientists picked their way through the Bulldog ranks for seven firsts: Romoli, high point man, in both high jump and two-twenty yard low hurdles, McClain in the eight-eighty, Howland in the mile, Douglas in the two mile, Sharp in the pole vault, Sieland in the hammer throw, and Roberts in the javelin.

Taking nine firsts against a remarkably strong seven-man squad, Tech downed La Verne 78-52. The Leopards gave a good account of themselves, but sank before the victories of Morris and McClain in the sprints, Howland and Douglas in the distances, and Romoli, Sharp, Sieland, and Mathewson in the field events.

In the last meet of the season, the all conference frosh track meet, held at Tournament, Tech came in a strong fourth with a total of 18½ points. Consistent effort on the part of the team and Coach Stanton showed its results in the great improvement shown during the season.

B A S E B A L L



Manager Lien Forney Wheeler Coward Doll Cortelyou White Coach Reed
 Felt Carr Shipley Cleveland Childers Sluder Graham

Although only twelve men are out for freshman baseball, a successful season is to be expected. It is certain that every man will have a chance to play during some of the many games that are being scheduled by the managers, Elvin Lien and Don Cleveland. The two most promising "chuckers" are Edward Doll and Ed Wheeler. The former, it is true, has nothing on the ball, but he certainly is very much alive to what is going on and is sure to be in a great many games as a mainstay. Wheeler, on the other hand, throws a fast ball. At the receiving end of the pitched balls will be found Gerald Forney or Joe Carr, who catch everything that the hurlers will be able to send over the plate. Alternating behind the plate, these men are certain to do their share towards winning the game. Although the other positions in the infield and outfield on the team are uncertain at the time of going to press, it is safe to assume that the following men will hold down the positions assigned to them. Doll will probably alternate with Carr on first base as head put-out man, while both Shipley and Kurata will try for second. At present Sluder seems to have third base well in hand. At short stop Bob Felt is the ideal man, scooping up low, fast balls being his specialty. Of the above mentioned, Bill Shipley, when not playing second base is certain to be found either in left or center field. Others who have not been men-

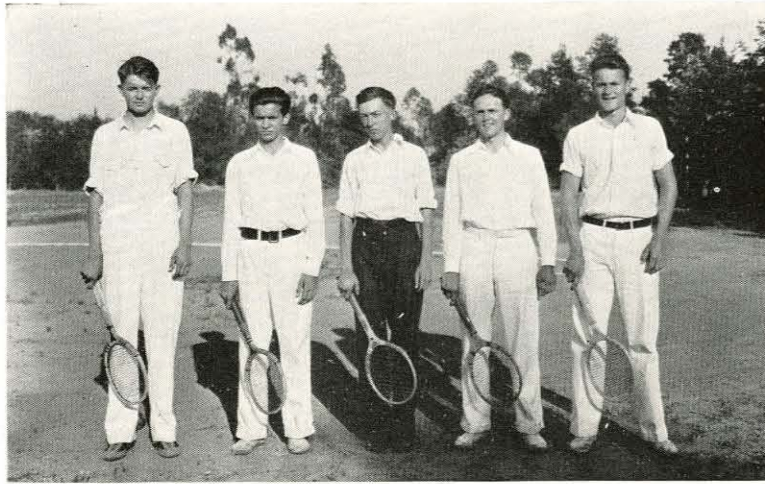
tioned but whose work has been consistent and merits recognition are: Milford Childers, Jack Cortelyou, and Charles White, and also Lamar Coward who is prohibited from playing conference baseball this year.

At bat, the frosh should be able to give a good account of themselves, if the pre-season hitting ability of the men continues. Foremost among the "sluggers" stands Joe Carr. In the second practice game of the season he brought in two home runs. Undoubtedly, the frosh squad looks good and should do a great deal towards getting to the top in the schedule.

Coach Homer Reed may well be proud of his men and much credit should be given to him for bringing the men into form. Whether or not his work in putting a team on the diamond will result in a greater number of wins than defeats is of little consequence; he has instilled in the men the spirit of the game, which should be played as a game, for even in defeat the Cal Tech spirit prevails.

Since few men who have had experience in baseball come to Tech it is important that successful freshman teams be put on the field in order to obtain adequate material for the varsity squads of future years. This year's squad, although not made up of stars, undoubtedly contains much material which will prove valuable to Tech teams in future years.

M I N O R



Boykin Woodward Brown Connor Haight

TENNIS

With three conference victories already and but one more match to go, the frosh tennis team followed in the varsity's footsteps to another tennis championship at the time of going to press. The Tech squad defeated Whittier, Oxy, and Pomona, and won the championship by a 5-4 win over Redlands.

As usual the season started with a tournament among thirty-five tennis enthusiasts. The highest eight out of this play-off made up the squad. They were Haight, Connor, Allen, Woodward, Brown, Boykin, Tracy, and Little.

The first match was with Whittier, but it was forfeited to us by the Poets. The second match was with Oxy on the Tiger's courts, and though Tech lost both the first and second singles and first doubles, the wins in the third, fourth and fifth singles and second doubles gave the Engineers a 5-4 victory.

The third match, with Pomona, was played at El Monte. The Sagehens had been undefeated and loomed up as Tech's main barrier for a championship. When all matches except the first doubles had been run off, the Beavers were leading 4-3; and the remaining play was to decide the issue. The Tech doubles nosed out their opponents in the first set 7-5 and then settled down to a long hard grind from which they barely eked out a 10-8 victory. This gave the match to Tech 6-3.

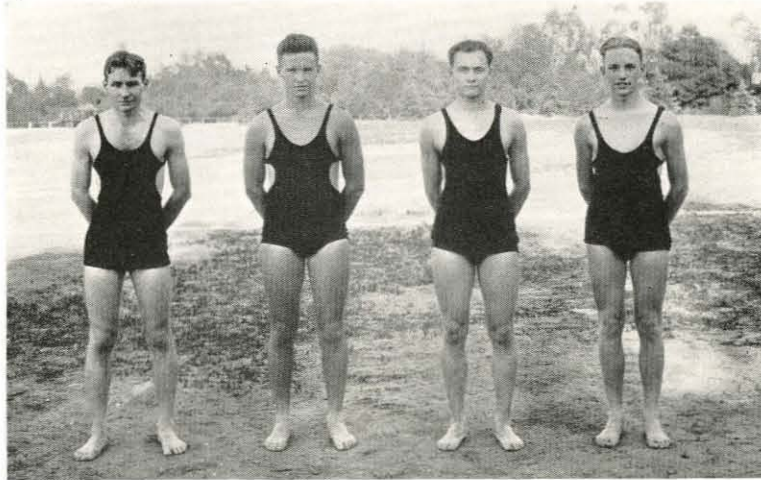
CROSS COUNTRY

On December 6, 1930, Tech's frosh cross-country squad upset the dope to annex the freshman championship in the Southern California Intercollegiate Conference marathon run. The result of the conference meet held at Pomona found the Institute team in the lead with twenty-seven points. Although two men were ahead of Douglas, Tech's first man in, the ambitious efforts and forceful grit of the members of the squad to place in the scoring helped bring up the final score to a mark which was unsurpassed that day by any other college frosh team.

The fast time of 18:24.5 was established by Whitaker of Pomona who led the field and was followed by an Occidental man. The lineup of Tech's runners as they passed the finish line follows: Douglas, third; Schneider, fourth; Travers, fifth; Sherbourne, sixth; and McClain, ninth, making a total of twenty-seven points. The three mile grind taxed the strength of many of the marathoners and several of the frosh who started were forced to surrender early in the game. The fact that Tech had five men finishing well ahead of the field, speaks well for their training and personal physical strength.

Previous to this all conference meet, the freshmen managed to cop second place in a

S P O R T S



Levering

Hannay

Donahue

Thomas

series of intra-mural runs at Cal Tech. Several promising freshmen of the group out for this sport are certain to make their mark in future track events. The marathon was the final result of several months training and climaxed the cross-country season. The six men receiving their numerals at the end of the season are Douglas, Schneider, Travers, Sherbourne, McClain, and Wyatt.

FROSH SWIMMING

Although the freshman swimming squad this year has been very limited in number, the accomplishment of its few members has spoken well for their efforts and those of Coach A. B. Allen. At the beginning of the second term a call was made for frosh swimmers, to which about twenty men reported. Unfortunately, owing to a lack of a pool on the campus, arrangements had to be made at the Pasadena Athletic Club Pool calling for a practice two days a week with the varsity squad.

Since the size of the pool limited the number of the squad, tryouts were held from which the six most promising men were picked.

In the first meet of the season held with Pomona at the Claremont pool, Pat Hannay, and Thomas Levering proved themselves to be

outstanding swimmers by breaking three records. Levering lowered the frosh conference record in the breast stroke event by three seconds, and is expected to do even better in the all-conference meet at Oxy, held in May.

Hannay, one of the few outstanding swimmers ever coming to Tech, broke both the freshman and varsity conference records in the hundred yard dash, and the two-twenty yard free style event. Swimming every event on the schedule in fast time, Hannay will only be limited in the conference meet by the conference ruling setting the limit at two events and the relay.

Through the coaching of A. B. Allen of the Pasadena Athletic Club all of the men made rapid progress during the season. Charles Thomas in the sprints, and Willis Donahue in the back stroke comprise the rest of the squad. With each man doubling in several events, the four man team is expected to make a good showing in the all-conference meet in May, and will break some records, whether they finish first in the scoring honors or not. Second term finals took their tolls and four men, Hannay, Levering, Thomas, and Donahue, composed the squad at the time of the Pomona meet.

Wait, for Time shall teach thee all things.

—MARTIN TUPPER

BOOK III

ACTIVITIES

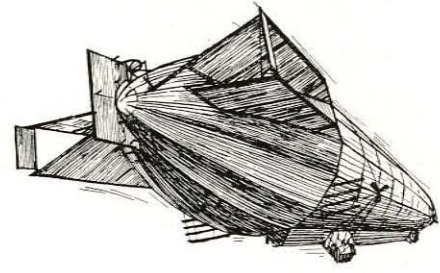


C O N T E N T S

PUBLICATIONS
FINE ARTS
THE YEAR
ORGANIZATIONS
GREEKS

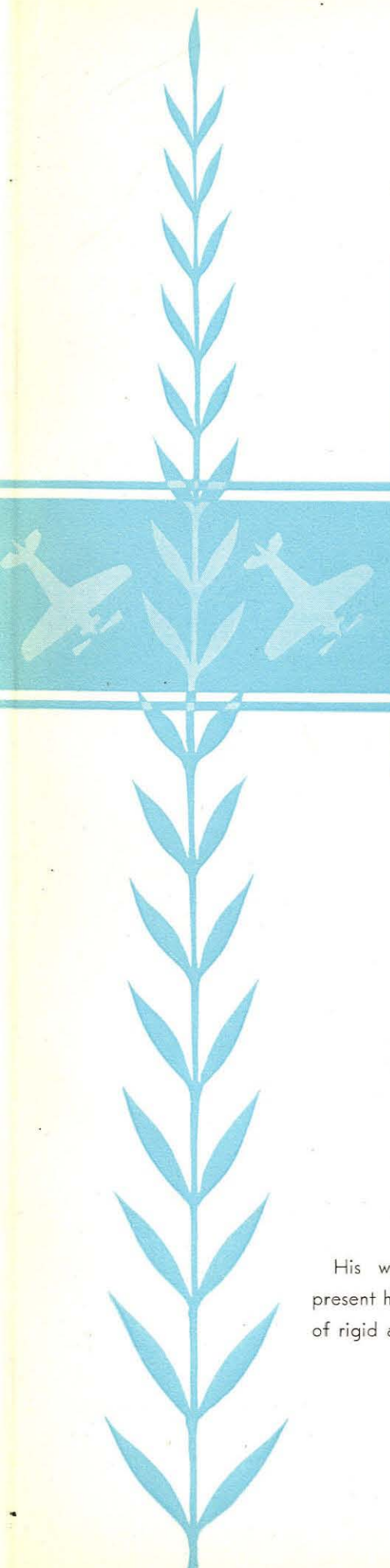






GRAF ZEPPELIN

His work is largely responsible for the present high stage of development of the type of rigid airship which bears his name.

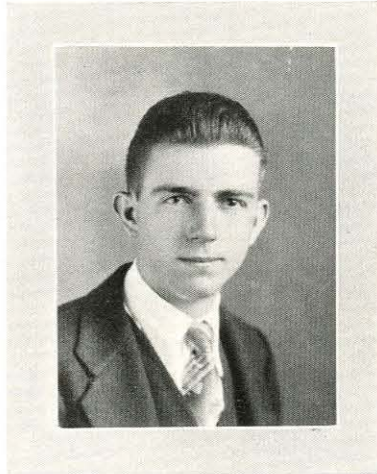


PUBLICATIONS

THE "BIG T"

The creation of the "Big T" and its development into a distinctive and representative year book was the problem that has been solved successfully by Lawrence Ferguson and Clark Goodman, editor and business manager, respectively.

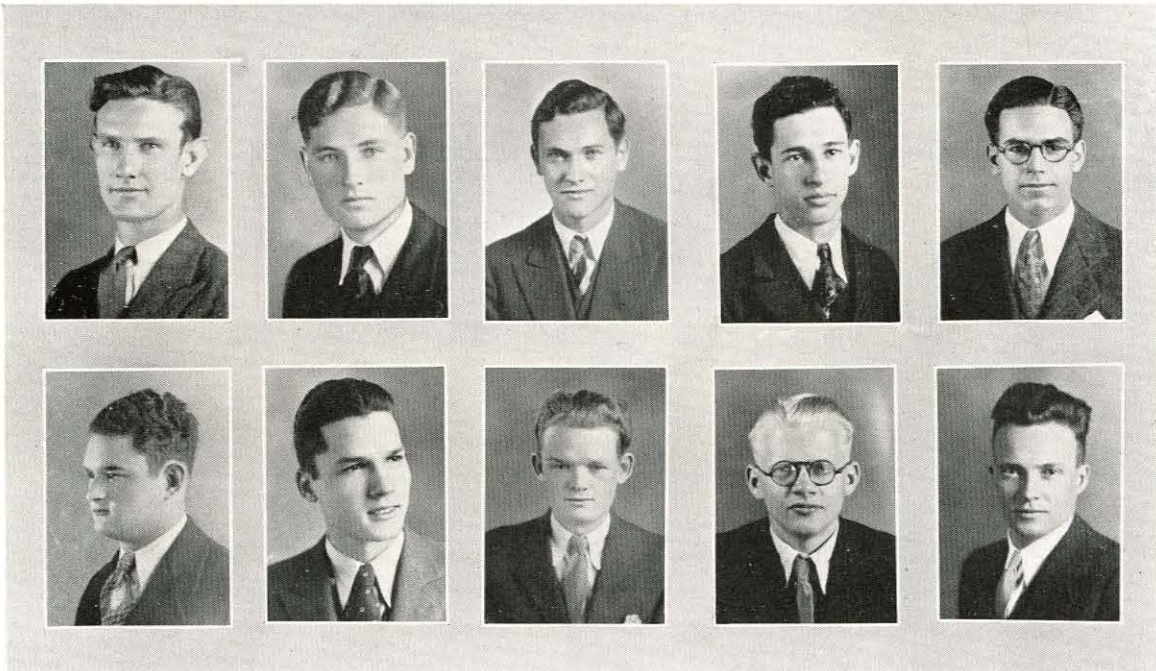
Continuing the precedent of presenting in the theme of the "Big T" the progress that has resulted from scientific research, the "Big T" of 1931 portrays in a most beautiful manner the progress in aeronautics; progress which owes itself to the painstaking accuracy of scientific investigation. The main division pages



Ferguson

show the type of aircraft that one saw, sees, and shall see; while the subdivision pages show the men responsible for this progress, and the particular work they did in furthering the steady growth of aerodynamical knowledge.

Working directly under Lawrence Ferguson were George Langsner as assistant editor, Harold Roach as managing editor, George Rice as sports editor, and Albert Atwood, photo editor, who performed their duties most ably. These men were assisted by Merrill Berkley, Paul Arnerich, Joe Deming,



Labory
Advertising Mgr.
Grafman
Editorial Staff

Rice
Sports Editor
Arnerich
Business Staff

Langsner
Assistant Editor
Warren
Secretary

Roach
Managing Editor
Lien
Editorial Staff

Stipp
Circulation Mgr.
Crater
Business Staff

PUBLICATIONS

Cecil Killgore, Jack Amann, Kenneth Warren, Ben Haynes, Carl Lind, Robert Griffin, Bob Smith, Jack Grafman, Arthur Brooks, and many others who put in a great deal of time writing stories and mounting pictures.

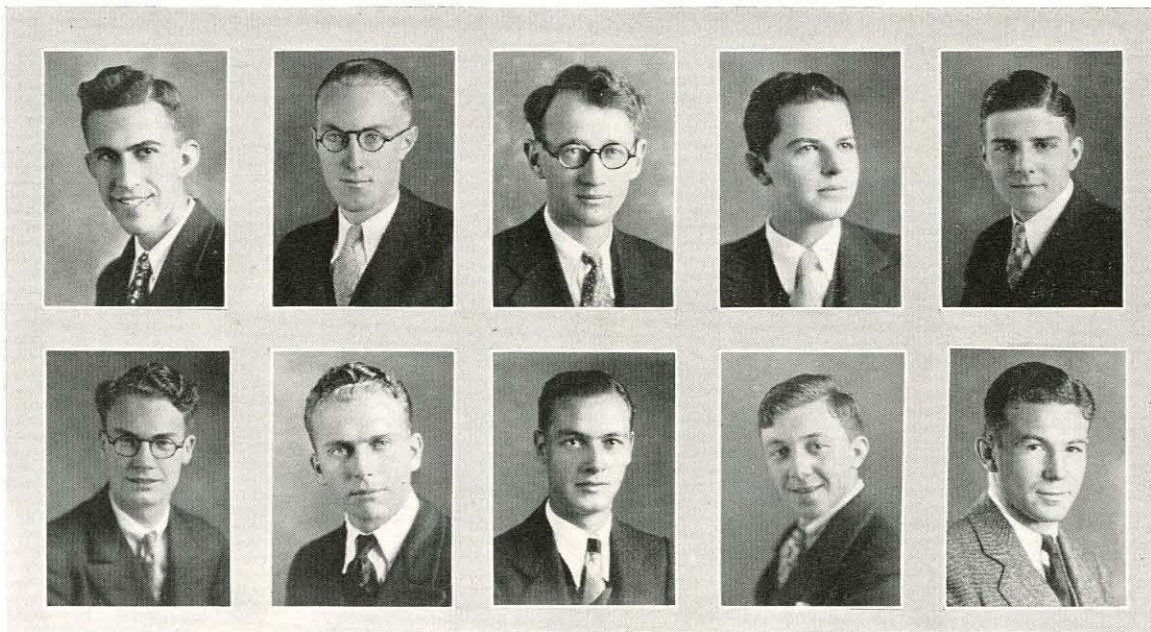
The business staff was handicapped this year both by the economic depression, and the fact that Clark Goodman did not take over the reins of business manager until December, following the resignation of Phil Schoeller, who left for Europe as a member of the Student House Committee. Considering these things, Good-



Goodman

man has done a most excellent job as business manager and he was aided in his work by Charles Stipp, circulation manager, Ray Labory, advertising manager and other valuable men.

The work of the annual staff proceeded slowly during the first term as plans were carefully drawn up, a competent staff selected, and assigned duties. In the second term assignments were made and the work progressed smoothly and was completed by the end of April, thus allowing the printers and binders ample time to do excellent work on the physical appearance of the year book.



Griffin
Senior Editor
Berkley
Editorial Staff

Amann
Activities Editor
Haynes
Editorial Staff

Atwood
Photo Editor
Smith
Editorial Staff

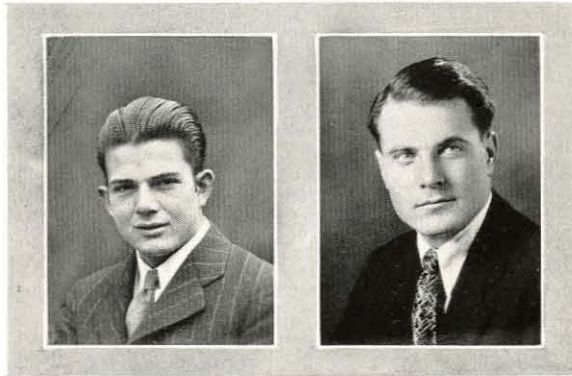
Killgore
Organizations Editor
Schiller
Editorial Staff

Deming
Photography
Brooks
Editorial Staff

PUBLICATIONS

THE CALIFORNIA TECH

The California Tech has passed through one of its most trying years, suspension of the publication being continually threatened in the first term. With the election of Robert Smith as editor and Lawrence Ferguson as business-manager, the paper has gradually been put on its

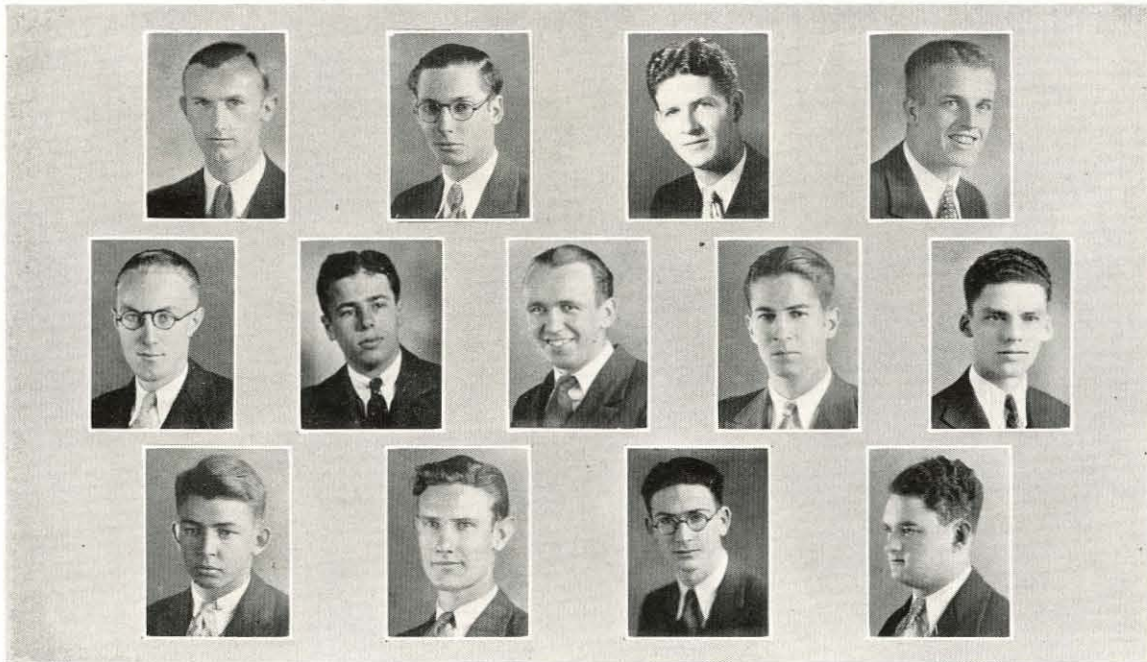


Miller

Pownall

feet editorially and financially.

After printing the first issue of the California Tech practically single handed, Jack Hatcher resigned because of the lack of interest and co-operation shown by the student body. The executive committee appointed temporary editors until the election



Graff
Sports
Amann
Advertising Mgr.
Davis
Business Staff

Kircher
Reporter
Scholtz
Sports
Labory
News Editor

Ritter
Theatre

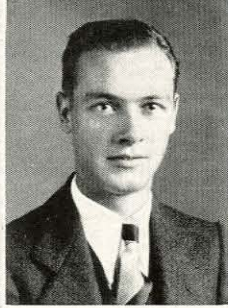
Bradburn
Sports
Terrill
Sports Editor
Ribner
Reporter

Freeman
Reporter
Chambers
Reporter
Grafman
Associate Editor

PUBLICATIONS

of Glenn Miller. Miller proceeded to publish several issues of the Tech at the expense of his scholastic standing and as a consequence was forced to leave the school. The football banquet edition was edited by Grafman and Parsons, who succeeded in commemorating our first championship football squad.

At the beginning of the second term Robert Smith assumed the helm of editor and

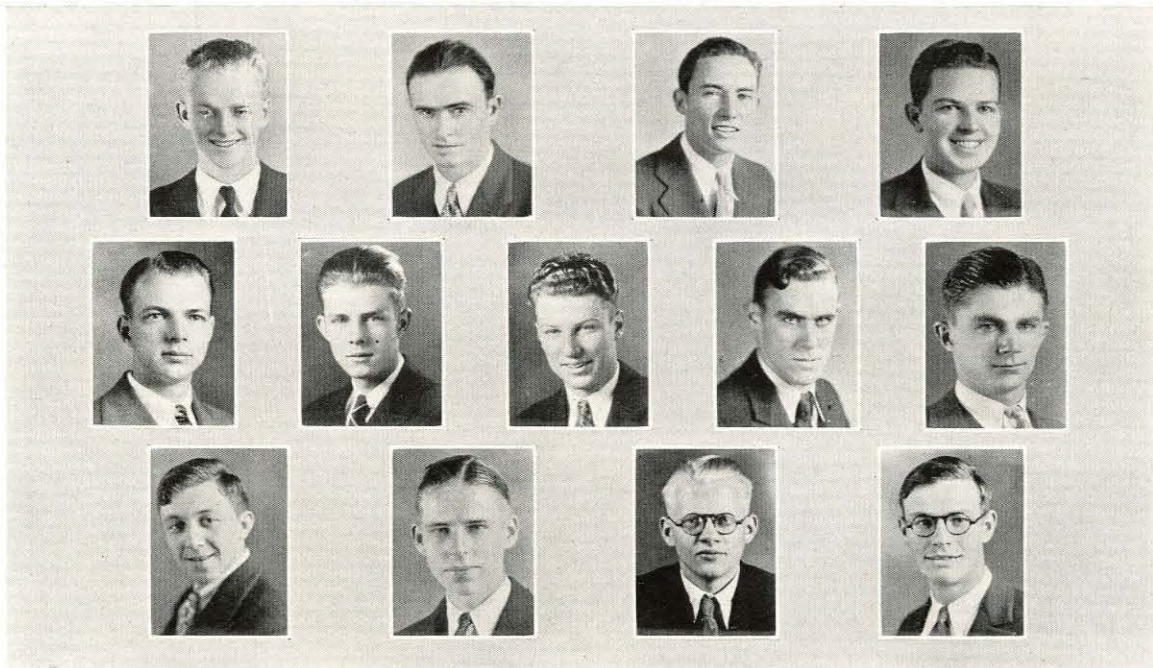


Smith



Ferguson

by almost super-human effort finally secured a working staff. At the same time Lawrence Ferguson, who had made a success of the 1930 Big T as its business manager, was drafted as manager of the California Tech in order to put the Tech on a self-supporting basis. Because of these changes the Tech was a success for the rest of the year.



Simpson
Business Staff
Voak
Reporter
Schiller
Reporter

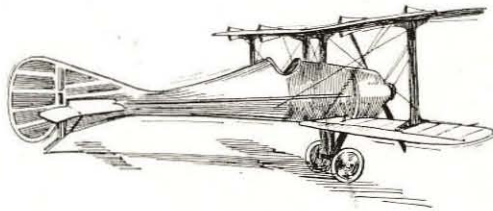
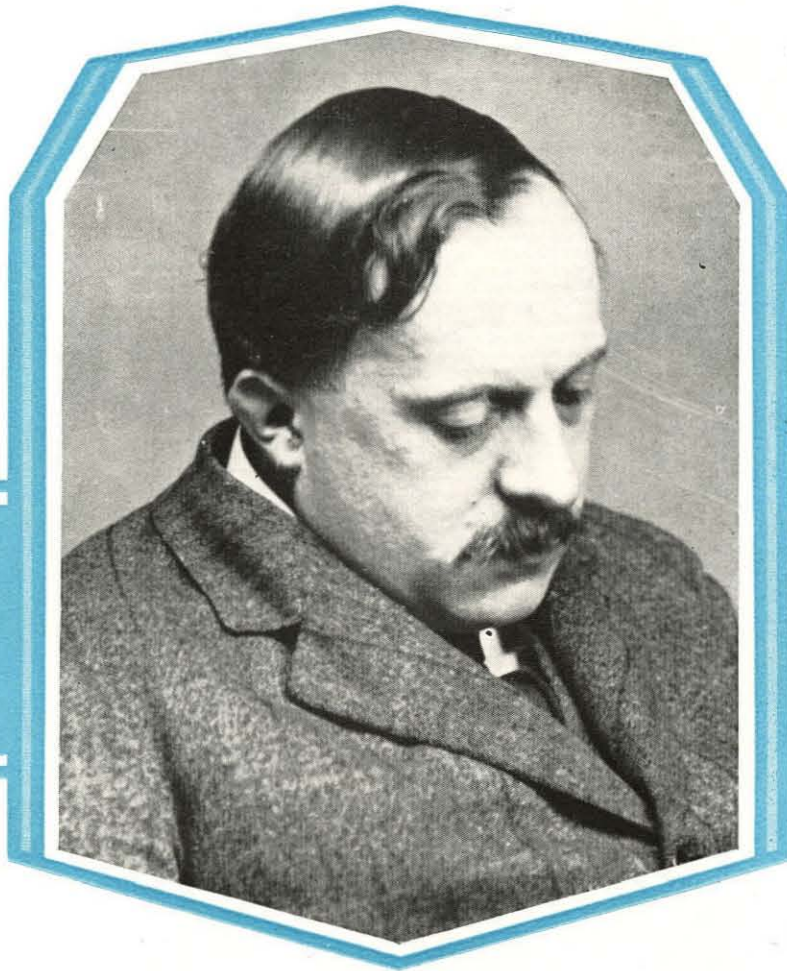
Wineland
Accountant
Carleton
News Editor
Monning
Business Staff

Foss
Business Staff

Keachie
Reporter
Parsons
Reporter
Lien
Copy Editor

Killgore
Asst. Bus. Mgr.
Russell
Business Staff
Coryell
Reporter





FREDERICK W. LANCHESTER

English experimenter and scientist whose many contributions to practical aircraft design in the period prior to and after the Great War were of very great value.

MUSIC

BAND

Among the most active organizations on the campus, the band has this year proved itself one of Tech's most useful groups. Mr. Alexander Smith, who comes twice a week from the Roosevelt High School to instruct the band in the arts of the wind instruments, has developed this organization into a well balanced group of musicians. In spite of the fact that the band is no longer a military organization, it has had enough student participation to ably represent Tech in all activities that required the efforts of a band.

The band was extremely active this year. It played suitable musical selections at all the games of the season, except the Stanford game. With the Student Body supporting it financially, the band travelled to the San Diego game by bus to cheer the team on to their championship victory. At the end of each victorious game the band led the serpentine and other forms of collegiate football outbursts. The band also played at several

football pep assemblies and rallies, adding Tech music to Tech spirit.

Besides giving its services to the student body activities the band also played for a number of outside organizations. As usual the band had its place in the annual Pasadena Tournament of Roses, this year leading the seventh division. This, an engagement at the Flintridge Riding Club, and a few less important events, together with the school activities, constituted a busy year for the band.

A new bass drum was added to the growing number of school owned instruments of the band. This new drum replaced the old one which needed repair and aided materially and instrumentally in putting the band's activities over with a "bang."

The work of the band this year cannot be praised too highly. Much credit must be given to its members, as well as to its instructor and officers for time and effort they have expended in making this organization what it is.



MUSIC

ORCHESTRA

For the past five years the Cal Tech Orchestra under the leadership of Mr. Reginald Bland, has provided a means of expression for musically inclined engineers and scientists.

Although handicapped by lack of a complete string section, violins in particular, the Orchestra, augmented by members of the Pasadena Civic Orchestra, gave a very creditable concert in Dabney Lounge. Selections from current light operas featured the program. Besides at least one yearly appearance whether in an assembly or in Dabney Lounge, the Orchestra furnishes music for Commencement.

Management of the group this year has been in the hands of Reginald Bland, director; Emmette Holman, president; Stephen Dorman, manager; and Dick Oulton, librarian.

PERSONNEL OF THE ORCHESTRA

Violins: Emmette Holman,
Alexander Haeff.

Cellos: Charles Patrick,
Harold Schiller.

Bass: Reginald Bland, Jr.
Saxophone: Robert Pelzel.

Flute: Richard Powers.

Oboe: Glen Woodward.

Clarinets: Lawrence Bolles,
Stephen Dorman.

Bassoon: George Pickett.

Percussion: Henry Bruderlin.

Horns: Laurence Gould,
Francis Wyatt.

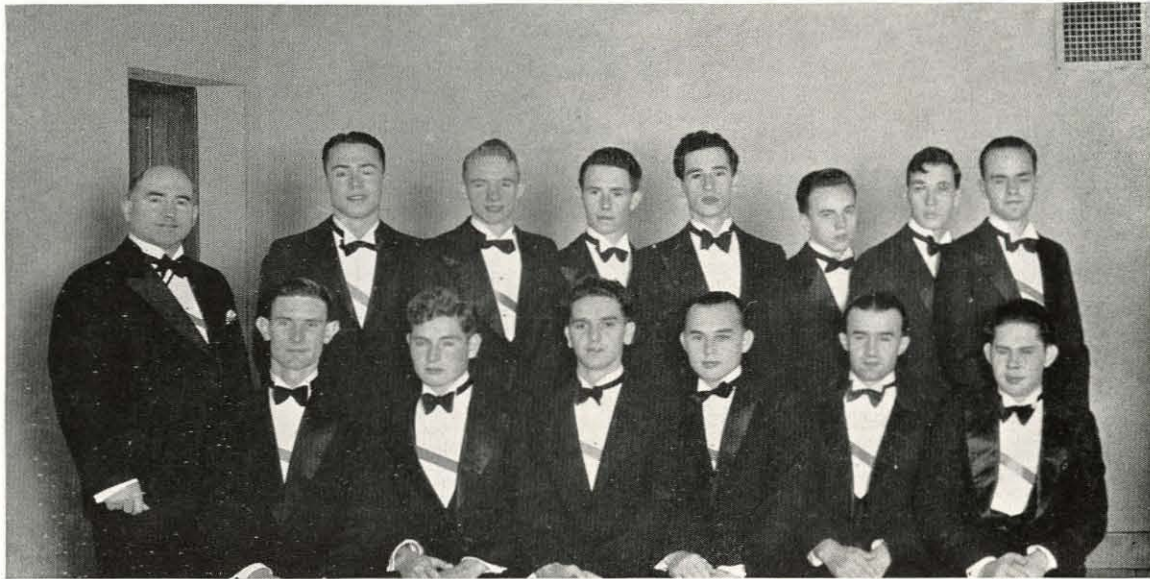
Trumpets: John Detweiler,
Henry Bellis.

Trombone: Ted Mitchell.

Piano: Dick Oulton.



MUSIC



Carpenter Kartzke Chamberlain Tarbet Roach Anderson Prudames
 Labory Rice Lind Schreck Arnold Oulton

GLEE CLUB

The Glee Club of 1931 has been one of the most successful in Cal Tech history. Under the direction of Mr. Allan Ray Carpenter a fine reputation was established, and the club was widely sought after by various organizations of Southern California for entertainment, and the problem was, not where to find programs, but which ones to choose.

None of this would have been possible without the perseverance and interest shown by the members during the first term before a public appearance. At that time the club did nothing but practice continually on their repertoire for the coming year.

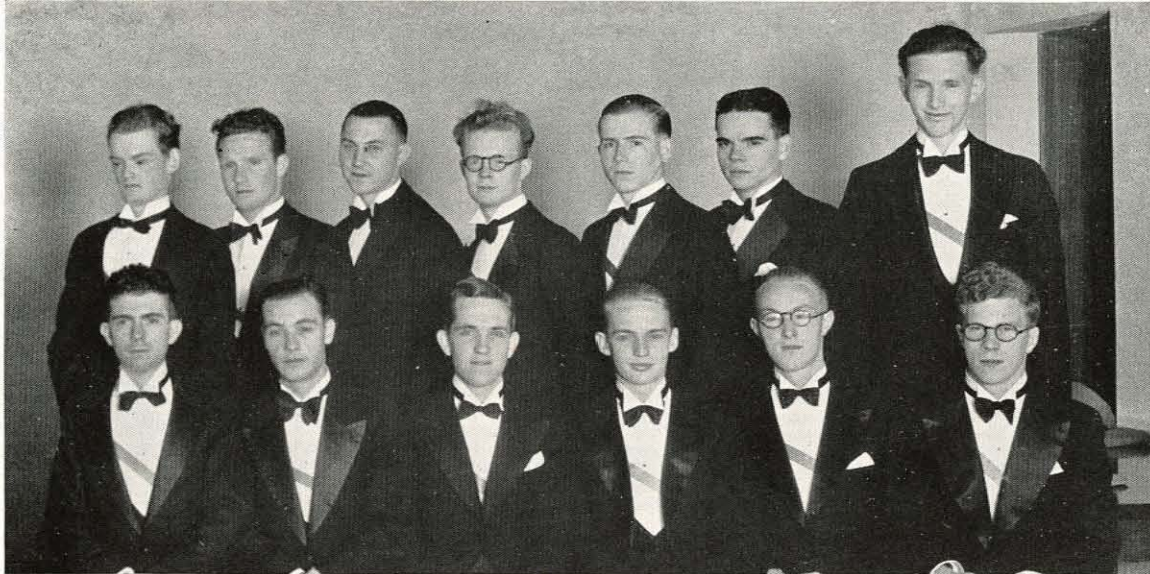
Through the courtesy of Mr. Carpenter the club was very fortunate this year in being able to hear some of the foremost singers of the West. Among these were Don Novis, winner of the Atwater-Kent National Radio Contest three years ago, and of recent motion picture fame, and Miss Esther Coombs, who sang in the New York finals of the radio contest this year.

The club started out its year with an exchange program at Oxy under the auspices of

the Oxy Women's Glee Club, and were royally entertained afterward at a luncheon in the Student Union Building. Afternoon classes were soon forgotten in the midst of a good time. Following the club's debut for the year, a program was given at the Broadoaks School and was well received. A great time was had afterwards in refreshments and dancing. To describe fully the good times had by the club during the year would fill many pages, and only a brief summary will be attempted here.

A program was given before the Alhambra High School student body, and lunch, of course, was served afterward. Several programs were given "over the air" over KPSN, KFWB, and KHJ. The club gave an assembly program before the Tech student body which was well received. Two programs were given on Exhibit Day, and one for Commencement. A Home Concert was given in Pasadena which was well attended, and afforded an evening of pleasure to those present. The club climaxed its good times in the Intercollegiate Glee Club Contest this year for southwestern colleges.

MUSIC



Warren McGarry Holman Patton Anderson Hacker Fitch
 Ferguson Smith Wheritt Thomas Amann Hunter

The prize song was "Feasting I Watch," by Edward Elgar, a very interesting arrangement. The choice song was "The Long Day Closes," by Sullivan. Both numbers were sung a capella, and the group was concluded with the Tech Alma Mater. A dinner was given for the various clubs before the contest.

The membership of the club this year was well over forty, and with so many members returning, an eventful year is anticipated next year. This year was one of the most successful and eventful years that the Glee Club has ever had, and the club is grateful for the work of its officers and director.

DIRECTION

Mr. Allan R. Carpenter Director
 Dixon Oulton Accompanist

OFFICERS

J. F. McGarry President
 J. R. MacMillan Treasurer
 J. H. Amann Manager
 R. G. Smith Librarian

MEMBERS

J. H. Amann	E. B. Fitch	J. R. MacMillan	N. N. Skaredoff
T. F. Anderson	W. D. Hacker Jr.	J. F. McGarry	R. L. Smallman
W. E. Anderson	Ben C. Haynes	D. Oulton	R. G. Smith
E. Arnold	K. E. Hegardt	H. E. Pearson	C. Spicer
H. A. Bellis	W. Hoch	E. M. Prudames	T. V. Tarbet
J. P. Carr	E. R. Holman	G. S. Rice	C. F. Thomas
G. Chamberlain	F. R. Hunter	H. Roach	K. P. Warren
W. M. Cogan	R. F. Labory	B. H. Rule	N. Weinstein
L. L. Ferguson	C. Lind	J. R. Schreck	R. C. Wheritt
		W. B. White	

F O R E N S I C S

VARSITY DEBATE

It is entirely in keeping with Tech's standard of liberality in its educational program that we find forensic activity occupying an imposing position. Many embryonic scientists and engineers realize that inestimable value may be secured from practice in public speaking, and thus they give support to debating and other forms of forensic competition. Platform presence, self-confidence, quick thinking, and conversational polish, are obtained by those who represent Tech on the public speaking platform.

Everyone who puts in some time in debate preparation is given a chance to compete with speakers from other schools. This acts as a tremendous incentive to those interested in debate work, and moreover, it allows many lower classmen to be trained for later years. This year's squad was composed of Amann, who also acted as manager, Hutchinson, Roach, Prudames, Harsh, Sheffet, Chamberlain, Kill-



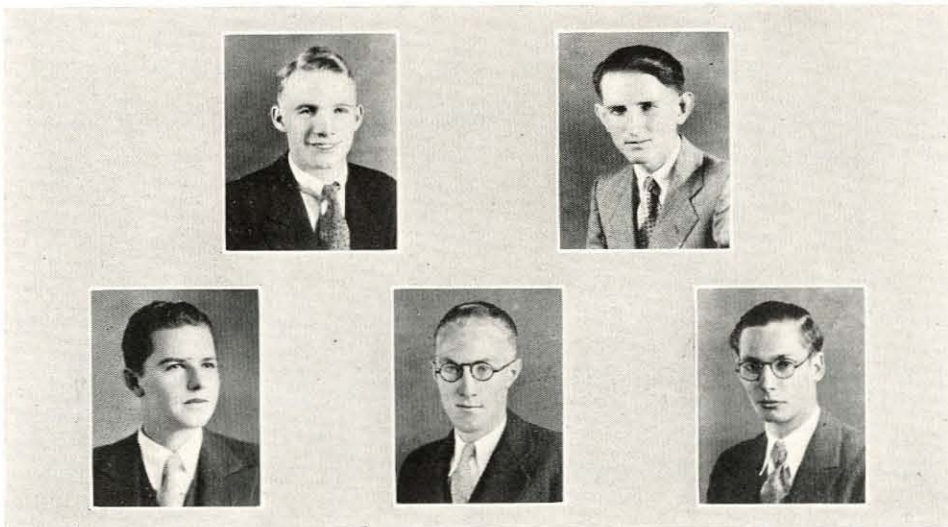
Untereiner

gore, Getzman, Davis, and Johnson. Of these eleven all but Amann, Hutchinson, and Chamberlain, will return next year to form the nucleus of another strong working squad.

Advice and coaching was very ably supplied by Professor Ray E. Untereiner, whose knowledge of debating is in constant demand and use at Tech. This year's debate question, as selected by Pi Kappa Delta and as

adopted by all of the conference colleges, was the subject of "Free Trade." Professor Untereiner's position as instructor in economics at Tech proved to be of especial value to the debate squad.

Starting the debating season with a hard tussle with Redlands, Roach and Prudames could not quite disprove the case for Free Trade, economic hypothesis conquering arguments of engineering practicability. Whittier College's attack on the affirmative case pro-



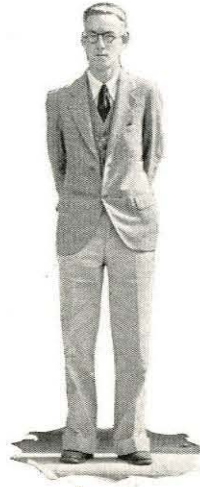
Killgore Chamberlain Amann Sheffet Kircher

F O R E N S I C S

posed by Harsh and Sheffet caught the approving pencil of two of the judges, though the other arbiter could see a decided preference for Free Trade.

Free Trade was very strongly attacked by Hutchinson and Getzman, and only by the unique method of utilizing the last rebuttal for constructive argument could Cal Christian's team put up a case. At the same time a powerful U. S. C. affirmative team conquered Roach and Prudames, although Tech's side of the question was ably upheld. Hutchinson and Killgore thoroughly convinced the judges of the desirability of Free Trade in their argument with the La Verne negative team. This was Tech's first league victory of the season.

An interesting style of debating was tried at Woodbury College by Hutchinson and Killgore. Questions asked during the regular speeches served to clarify many points in the minds

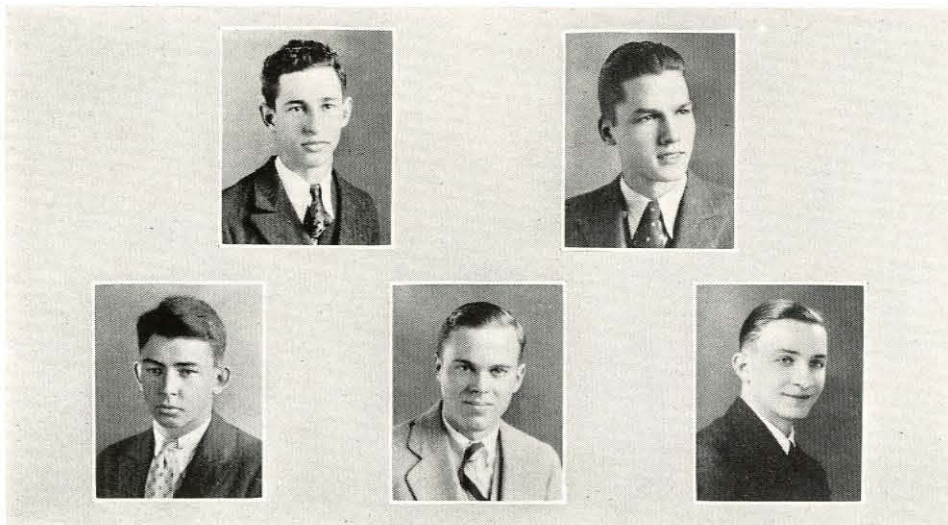


Amann

of the audience. The team of Davis and Johnson was given the hard task of engaging the Southwestern University lawyers. Tech had the negative side of the question, but the keen legal tongues of the law students supported Free Trade successfully. In their return debate the fluent lawyers from Southwestern ably attacked Free Trade, although Amann and Hutchinson made a strong defense of this economic hypothesis.

Killgore and Chamberlain took the affirmative side of Free Trade arguments, but did not quite overcome the arguments of the negative U. S. C. team.

A travelling women's team from Weber College, Oregon, took up the ever-present attack of Free Trade, while Harsh and Sheffet defended the affirmative side of the question. Free trade was supported by Whittier's team, but Hutchinson and Getzman gave the judges stronger reasons for a negative decision. This victory evened the score with Whittier.



Davis Roach Johnson Arnerich Harsh

F O R E N S I C S

The affirmative side of the conference question as given by the La Verne team was strong enough to overcome the negative objections proposed by our team, Davis and Johnson.

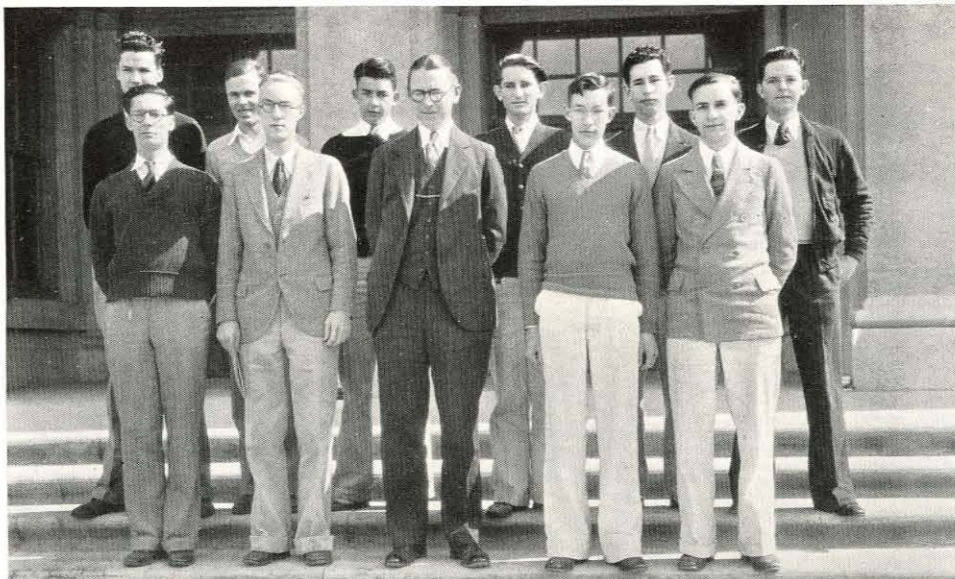
A strong argument in favor of Free Trade was presented by our team of Chamberlain and Killgore, and Redland's team thus failed to convince the judges of the merits of their side of the question. This victory over Redlands University atoned for our defeat at their hands early in the season.

The strong team of Amann and Hutchinson travelled to San Diego and argued in favor of Free Trade. The debate was held before a group of San Diego business men, and the decision was rendered by them. Tech won quite decisively, thirty-three to eleven being the vote. Two interesting non-decision debates were held with U. S. C. women teams, Free Trade again furnishing the verbal cud. Amann and Hutchinson upheld the affirmative side of the discussion, while Prudames and Roach were our negative team. This couplet of debates gave our speakers valuable experience and polish. The travelling affirmative team from Brigham Young University was given stiff competition by Hutchinson and Getzman in another non-decision Free Trade debate.

The annual Stanford debate found Tech arguing in favor of Free Trade. Amann, Hutchinson, and Killgore combined their talents to uphold this closely contested non-decision meeting. Roach and Prudames met the travelling team from Wyoming in a non-decision discussion of Free Trade, Tech having the negative side of the question. Another debate was held with a women's team from Linfield College, Davis and Johnson attacking Free Trade while the visitors pointed out its merits.

The final event in the forensic year at Tech was the Pi Kappa Delta Regional Meeting held this year at Redlands. Four California Colleges were represented, the College of the Pacific, U. C. L. A., Redlands, and Cal Tech. Hutchinson represented Tech in the extempore contest, while Killgore orated at great length in the oratorical contest. In debate the Tech teams were Amann and Hutchinson, and Prudames and Roach. Hutchinson won first in the extempore contest.

Extemporaneous speaking ability is undoubtedly the most valuable experience to be secured from a forensic program. Spirited tryouts were held here during the first term to select Tech's representative. Francis Hutchinson emerged victorious after a close struggle.



Arnerich Johnson Davis Sheffet Roach Killgore
Kircher Amann Untereiner Prudames Harsh

F O R E N S I C S

FROSH DEBATE

"A man is judged by the companions he keeps." So it is in speaking, one is judged by the English he uses. Overcoming the handicap of inexperience by diligent and interested work in debating as an aid not only in the art of speaking, but as a means of investigating thoroughly some of the most serious present day problems, the freshman debate squad completed its second term's work with a great deal more experience and proficiency in "putting over a point" than they had been able to do previously.

Under the coaching of Glenn Chamberlain, freshman debate coach, the fundamental purpose was the training of the new men in the important principles not only of logic and argumentation, but of public speaking as well, supplemented by an opportunity for their application in the experience of the numerous class contests in preparation for the inter-collegiate contests which followed in the third term.

During the second term the majority of the debates were non-decision contests among the many men who were taking debate. Extempore speeches covering the many activities of

the men during the summer months featured a good part of the term's work. Donald Rooke, James Radford, Charles Schneider, Henry Bruman, Jack Desmond, Alexander Charters, Barry Dibble, Elvin Lien, and Garth Nicolson were the men who took debating at that time.

Due to the fact that more stress was laid on the underlying principles of debate, the men did not have time to participate in outside contests. The work on the conference question and on the question "Resolved: That Co-education should be instigated at Cal Tech" brought forth unexpected, but welcome talent, in the fiery arguments, both pro and con, hurled back and forth, which is certain to be good material for future varsity teams.

In the third term began the series of conference contests, with Redlands, Whittier, La Verne, and Cal Christian, for the Freshman cup on the question "Resolved: That Installment Buying is Detrimental to the American Public." In these debates the affirmative was upheld by Henry Bruman, Jack Desmond, and Alex Charters; the negative team consisted of Barry Dibble, Harold Schiller, and Elvin Lien.



Chamberlain Radford Nicolson Rooke Charters Desmond Lien Bruman
(Coach)

D R A M A

"MILES GLORIOSUS"

On Friday and Saturday, November 21 and 22, 1930, the California Chapter of Pi Kappa Delta presented their annual classical play. This was the eighth play produced by this society at Tech. With directorial assistance from the Pasadena Playhouse and willing support of the student body, the play as produced was a great success.

In presenting "Miles Gloriosus" or "The Braggart Warrior," Pi Kappa Delta gave to the Institute one of the most successful plays ever presented at Tech. "Miles Gloriosus" was written by the Roman playwright Plautus and is one of the few Roman comedies that have survived centuries of criticism. Under the direction of Thomas Browne Henry and the supervision of Gilmor Brown, the production revealed a masterpiece of wit, intrigue, and serio-comic situation.

"Miles Gloriosus" is the tale of the deception and undignified downfall of the Braggart Warrior, who, to himself was the criterion of handsome, wise, brave, and desirable manhood, the one and only in all Greece, the Pyrgopolynices. He lives on a highly elevated plane, thinking all the women in Greece are madly in love with him (or would be if they caught sight of him) and are only too willing to come at his beck and call. Here in Miletus

he conceives a passion for a maiden recently arrived from Athens, and contrives to hold her in his house, which, unfortunately for him, is situated next to the home of Periplectomenus, an aged gentleman, who is the friend of Pleusicles, the lover of the maid and the owner of the slave Palaestrio, who now in the employ of Pyrgopolynices organizes the plan of action of the play.

This slave, Palaestrio, is the scheming, wily servant, who acts as go-between for both Pyrgopolynices and the lovers. Through the aid of the aged Periplectomenus he secures a woman to pose as the wife of the old man. Then he contrives to make this woman more desirable in the eyes of the warrior than Philocomasium, the young maiden. Having created this desire the wily slave lays plans to trap the villainous, vain, braggart in the lady's home. The supposed wife of Periplectomenus lures the victim on. Finally the trap is baited and the one and only Pyrgopolynices springs it. The angry husband is present and after threatening the "one and only" with many, many horrible punishments, allows him to depart.

Palaestrio, the slave, is the central figure of the play. It is he who conceived of the plan to bring about the downfall of the braggart. It is he who weaves about himself and all the



D R A M A

other characters the substance of the plot, while the disillusioned braggart is still thinking that every woman is hopelessly in love with his beauty.

Winchell Simpson portrayed admirably the scheming character of Palaestrio, which, perhaps, was the most difficult part in the play. The part of Pleusicles, the young Athenian gentleman, madly in love with the beautiful Philocomasium, was enacted by Ben Haynes. Jack Amann filled the toga of Periplectomenus, the old gentleman of Miletus and friend of Pleusicles, who enters into the plan with Palaestrio to cure the braggart of his mental illusions.

Harold Schiller minced and stalked to the steps of the above mentioned Braggart Warrior, while Wesley Nelson, as Artotrogus, dogged his footsteps and poured honeyed words of fictitious flattery into the braggart's ear, so that he, Artotrogus, would have a ready source of food and drink. The mobile, acrobatic eyebrows of the infamous braggart brought many a giggle from the amused and laughing audience.

The slaves of Pyrgopolynices, Sceledrus, he of the stupid countenance and slow brain; and Lucrio, the sponge who soaked up naught but alcoholic beverages, were played by Robert

Boykin and A. B. Lindeborg. Tom Tarbett enacted the part of the cook of Periplectomenus, always in readiness to execute upon the body of the infamous braggart, various and sundry operations of horrible character. Kenneth Warren acted the part of the serving boy who conveys to the braggart the message that the wife of Periplectomenus awaits his pleasure. Merrill Berkely and Albert Romoli donned tunics and became Roman slaves.

The part of the demure and alluring Philocomasium, the heroine, was blithely played by Frank Sackrider. Harold Bradley showed excellent form when he portrayed the character of the lascivious, sensuous, voluptuous courtesan, Acrotelutium, who posed as the wife of Periplectomenus so that the braggart might be trapped, while the part of her shy, but decidedly effective, maid, Milphidippa, was played by Lawrence Johnson. The three "women" succeeded admirably in maintaining the desired feminine atmosphere of the play. Also, the capers of the "women" added much to the humor of the situation.

All in all, this production, possessing an almost professional atmosphere, was one of the most successful dramatic presentations ever given at the Institute.



D R A M A

"THE BAD MAN"

The Dramatic Club of the California Institute of Technology presented this year, as its annual production, "The Bad Man." The play was given with great success on the evenings of May 1 and 2. Instead of diverting its talents into the varied ways of a group of smaller plays, the Club this year has concentrated its efforts on this one bigger play. It was through the assistance of the Pasadena Community Playhouse that the Club was able to secure directoral aid, being provided by Mr. Addison Richards, associate director at the Playhouse.

"The Bad Man" was written by Porter Emerson Browne and through the efforts of the director and the support of the cast the production was given life, spice, wit, and vigor. The train of events leading to an apparently inevitable conclusion, is suddenly and abruptly derailed in the precipitate appearance of the "Bad Man" himself. Adding feminine zest to the plot Marguerite Keyes and Mary Alice Wickeizer supplied excellent material for romantic interest.

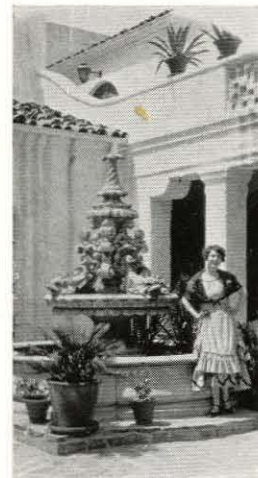
The plot of the "Bad Man" is intriguing, forceful, dramatic, in parts sad, and yet not altogether lacking the comical element. Ten thousand dollars must be obtained within twelve hours to pay the mortgage, or the ranch Gilbert loves so dearly will become the property of Jasper Hardy, whose daughter, Angela, is in love with Red, Jones' foreman; such is the predicament of Gilbert Jones at the opening of the play. This Mr. Jones is an honorable, upstanding, good-looking, and unmarried young man. His ranch was losing money, his cattle were being continually stolen by marauding Mexican bandits who had easy access to his lands from across the nearby border. Before the War, Gil, as we may call him, was in love with a young girl, Lucia, and because he was financially embarrassed he had left her. While he was away she married a rich man from Wall Street, Morgan Pell, who is visiting the Jones' ranch because he thinks there might be a possibility of oil develop-



Playhouse
Patio



Mr. Addison Richards



Fountain in
Patio

D R A M A

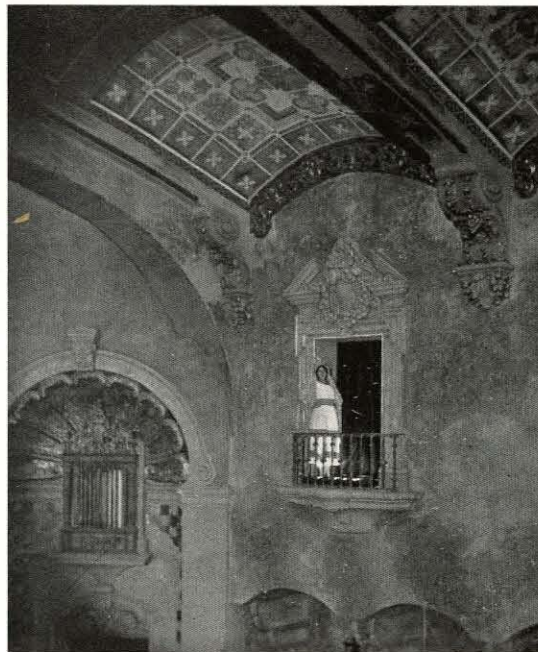
ment. He suspects that there is some relation between his wife and Jones, and his suspicions are confirmed by Smith, Jones' uncle, who is always complaining about everything in general and food in particular. Pell induces Jones to sell him the ranch, and by no means pleased by the attentions Jones has paid to his wife, he conceives of the fiendish idea of branding her. He is about to do this very thing when crash! bang! and who should enter but Pancho Lopez, who with a sweeping judgment repairs all evils for Jones, whom he recognizes as an old friend.

With swaggering bravado and the magnificent gestures of a bandit "soldado," John Mehl, as Pancho Lopez, gathers together the frayed strings of the plot and crystallizes them into a rapid moving scene of action that frees Jones from his debts, unites Lucia with her lover, and Angela with hers, kills the villain, Pell, and carries the plot to its happy conclusion. Henry Smith, Jones' uncle, is portrayed by Jack Amann, with a little cackle here and a little cackle there. The Pell family is represented by Al Voak, who, as Senor Wall Street, comes between Gilbert and Lucia; and Mary Alice Wickeizer, who ably portrays the sad-

eyed, forlorn Lucia, interprets the part very capably.

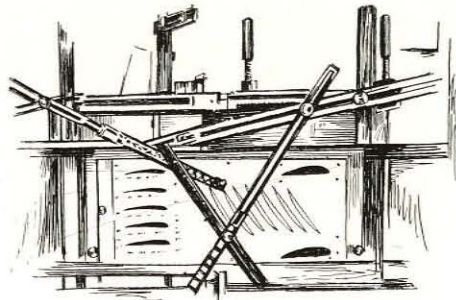
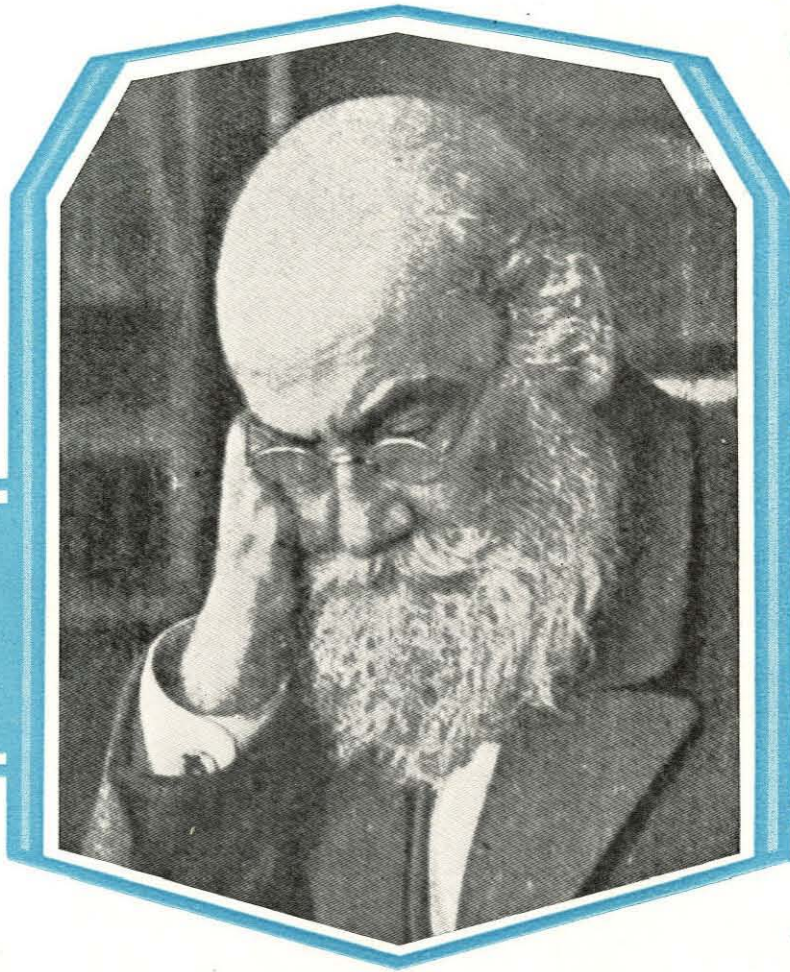
The part of Jasper Hardy, the cold, cruel, forecloser of mortgages, is played by Wesley Nelson, while Marguerite Hayes, as his daughter Angela, flutters about and hovers near everyone, especially Red Giddings, whom she loves, even though she doesn't realize the fact until Lopez tells her about it. The freckle-faced, harmonica-playing Red Giddings, Jones' right-hand man, best pal, and foreman of the ranch, is portrayed by Harold Schiller. The part of the sullen, menacing, grim, two-pistoled, dark mustached "leftenant" of Lopez, Pedro, is ably presented by Nicholas Weinstein, who himself is a terrible man of great power. The two minor parts are enacted by K. P. Warren and Lucas Alden who take the parts of Venustiano, one of Lopez's men, and captain of the Texas Rangers respectively.

The production was received by its audiences with great enthusiasm. This was one of the best productions ever produced by the Dramatic Club at Tech. Because of the earnest student support this Club has been able to carry out its program of presentations.



Interior of the Playhouse



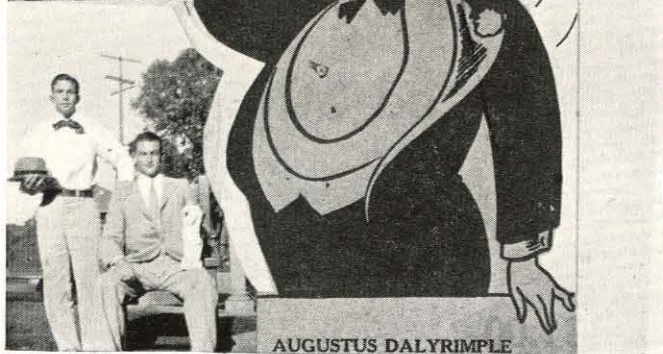
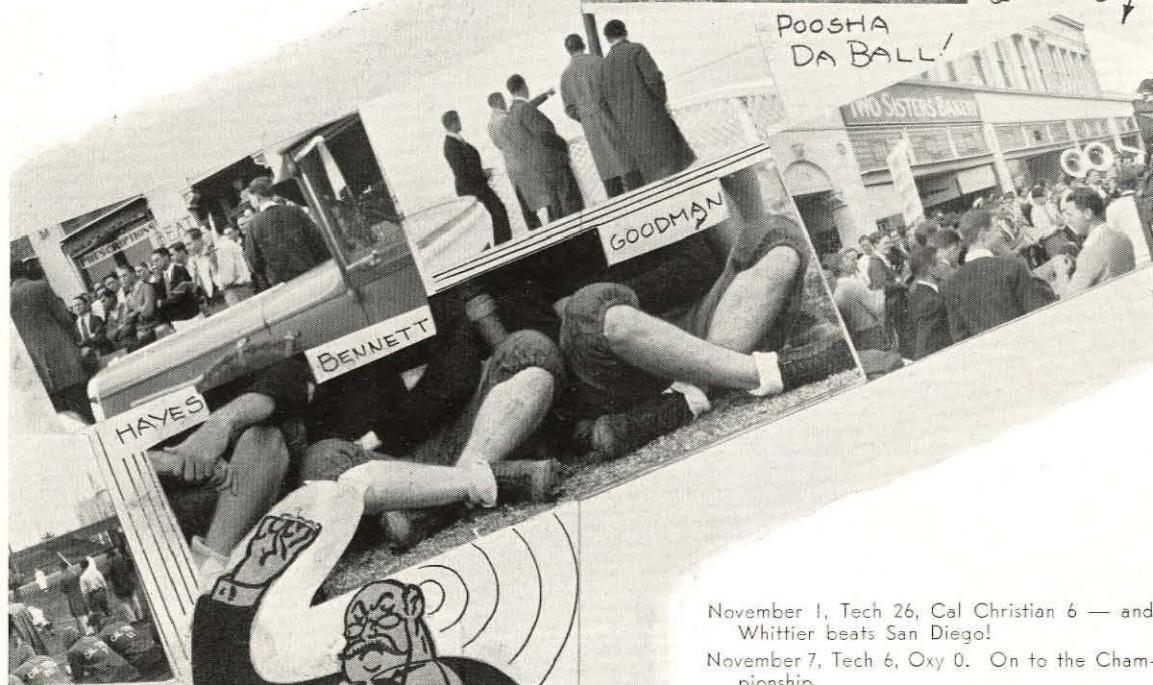


NICOLAI JOUKOWSKY

Is recognized beyond the borders of his native U. S. S. R. for his contribution to airfoil theory, and the reduction of airfoil curves to mathematical formulae.

T H E Y E A R

September 25, Frosh registered, welcomed, and shipped to Idyllwild.
 September 26-27, "Did you have a good summer?" the query as upperclassmen register.
 October 3, Hargis plus Arizona beat us 26-12.
 October 10, Bob Lehman elected president on better Friday assemblies, gym, student houses, no gravey.
 October 11, La Verne downed. Sophs push Frosh off field in Rodeo.
 October 17, Glenn Miller elected editor of the California Tech.
 October 18, Tech 2, Pomona 0. Enough cause to celebrate.
 October 25, Burly Bruins beat Battling Beavers, 30-0.
 October 27, Captain John Noel enthalls students with pictures of Mt. Everest Expedition.



November 1, Tech 26, Cal Christian 6 — and Whittier beats San Diego!
 November 7, Tech 6, Oxy 0. On to the Championship.
 November 8, Seniors show Frosh social behavior at Pasadena Golf Club.
 November 10, N. S. F. A. starts the straw vote season on longer Christmas vacations.
 November 11, The beginnings of the Student Houses Committee.
 November 14, Lehman, Schoeller, Scholtz leave for Europe to investigate housing.
 November 15, Eastman runs for touchdown, but Stanford won 57-7, while student body dances in Dabney.
 November 20, And still another editor of the Tech resigns.
 November 21, Pi Kappa Delta play.

T H E Y E A R



November 27, Tech beat San Diego 20-0—
Hail the champions.
December 5, Student body gorges at Football
Banquet.
December 16, The midnight oil and those blue
books.
December 20, Frosh Student Body dance at
Vista del Arroyo.
January 5, Registration day again, and Dr.
Einstein here.
January 12, Bob Heilbron, Tech alumnus,
Rhodes Scholar, tells us how to get in in the
wee hours.
January 13, N. S. F. A. questionnaire on ac-
tivities.
January 17, Basketball team loses to Oxy. Stu-
dent body dances in Dabney.
January 22, Augustus Dalyrimple arrives and
tells all about Hacker.

...suggested candidates on this bulletin Freeman (unopposed)
was elected and Schoeller is in the finals today.

SIGMA GOVERNMENT

By the Sigmas, for the Sigmas, and of the Sigmas
Vote G.S.A.P. Ticket

COMPLIMENTARY TICKET
Pass—(us th...)
THE CALIFORNIA T...

1. "Delegat..."
2. "Fairy"
3. "All"
4. (W...)
5. "S"

Mud Slinging Campaign

The type of mud-slinging campaign that will follow the
interest of last Friday's election can now be...

Smash the G.O.P.

FELLOW STUDENTS:
DON'T LET RICKETT'S HOUSE GET IN—
THE BLACKER BOYS ARE WHITER.

FROM SIGMA BULLETIN, MARCH 6, 1931.

Bulletin No. 2—A take off on the first handbill.
...reason.

MACHINE

Allegedly printed of, by and for the Cam-
political combination. Student is m...

Freshman Student Body
Dance

In Honor of the
California Conference

...participated for this afternoon's showdown, and general hell is...

STUDENT GOVERNMENT

by the students, for the students, and of the students.

VOTE FOR

President..... Phil Schoeller
Vice-President..... Bob Freeman
Secretary..... "Texas" Hutchison
Treasurer..... Ben Haynes
Publicity Manager..... Bob Wherritt

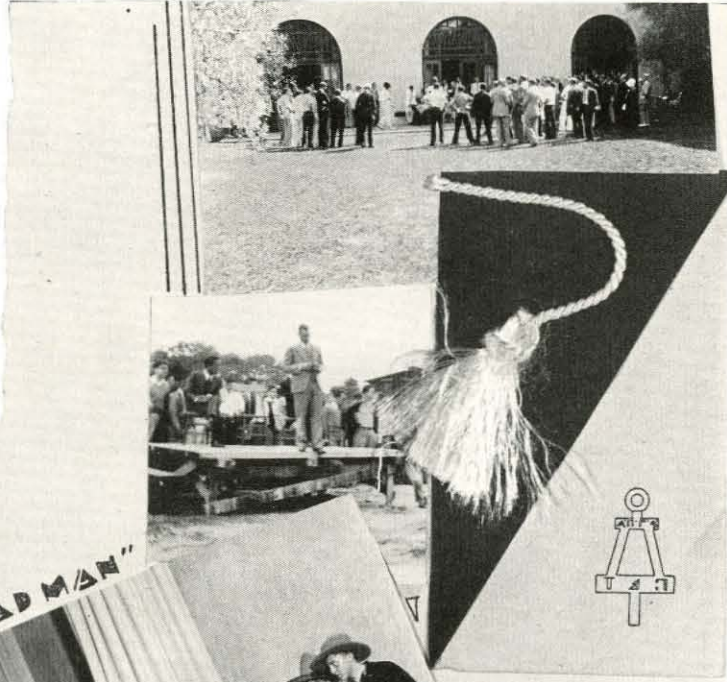
FELLOW STUDENTS:
Is it fair to say that these men are "men who have
worked up to the office for which they
men who have shown no
fairs?"
That statement
The above condit-
has to offer for
The political
The only
and subject
THE REPR-
TREE DEW
TELLS YOU

January 23, Laurel and Hardy amuse us. Get
your chicken feed ready, boys.
January 26, Hendrik van Loon talks to us on
things in general—laughs a plenty.
January 30, Captain MacLaglen brings the
curse of Jiu Jitsu to the campus.
February 2, Professor Terman of Stanford on
geniuses.
February 2, "The Torch Song," for our deficit.
February 7, Basketball team comes through
with victory over Pomona.
February 8, Travellers return. What did you
see over there?
February 11, Kedroff Quartette presents an
appreciated program.
February 13, Tau Bete picks the bright Juniors.



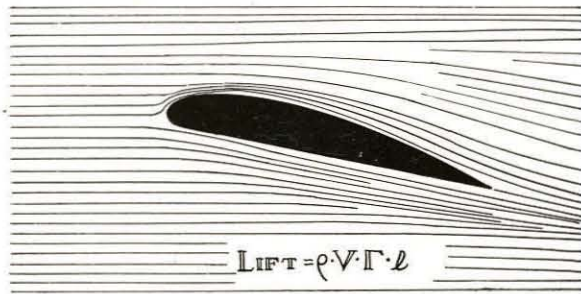
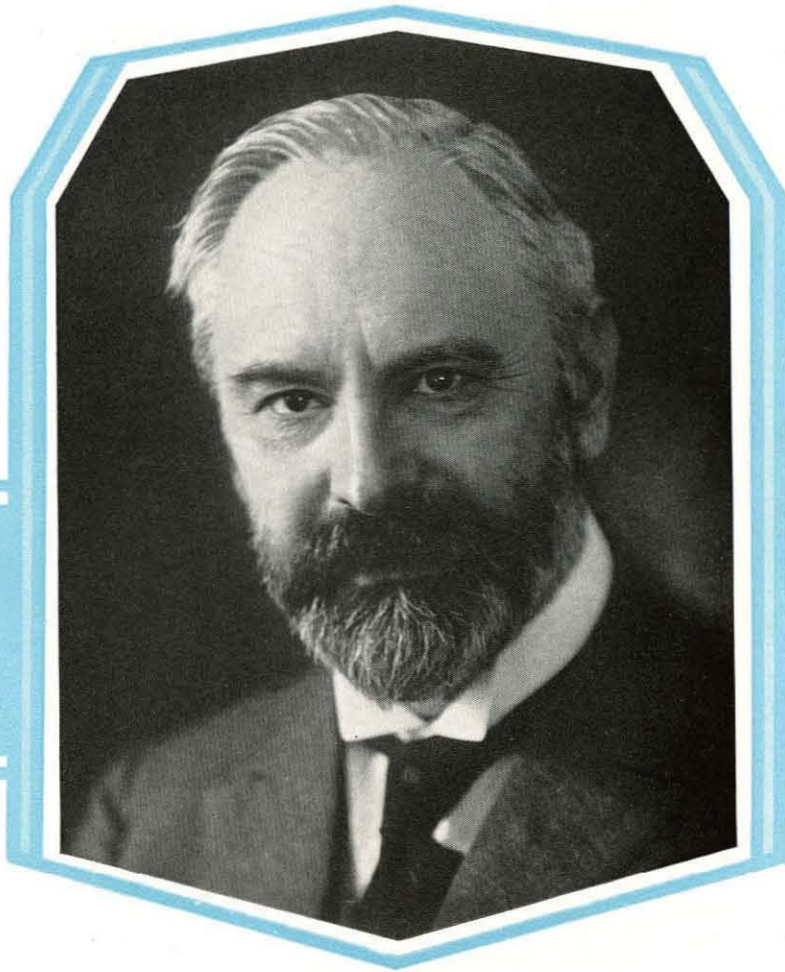
T H E Y E A R

April 17, Exhibit day brings thousands.
 April 18, Varsity Club dance closes Exhibit Day.
 We place fourth in Conference Track meet.
 April 23, Applications for student residences distributed.
 April 24, Fanchon and Marco girls enliven assembly.
 April 25, Baseball team brings in its first conference win over Santa Barbara.
 April 30, Seniors ditch school and enjoy Balboa.
 May 1, The Dramatic Club presents "The Bad Man."
 May 8, Whittier program at assembly. These exchange programs are good.
 May 9, The last Inter-fraternity Ball! Where do we go from here?



May 22, Pomona gives a program.
 May 23, Junior-Senior Garden Party. Oh, where is an empty bench?
 May 30, Student Body dances for last time in Dabney.
 June 3, Seniors take their examinations. Wonder if I passed?
 June 8, Senior week is here. Time to celebrate.
 June 9, Examinations for the last time this year.
 June 11, Class Day—honor keys, class will, tea, etc.
 June 12, The seniors receive their degrees. Some more bachelors.
 June 13, The Junior-Senior Prom! Hail and farewell.





LUDWIG PRANDTL

Contemporary German scientist of Göttingen and a recent visitor whose work in the transformation of a wing into a line vortex and in the field of vortices is universally recognized.





Arnerich
Freeman

Ferguson
Goodman
Stipp

Dickey
Bradburn
Hacker

Killgore
Pratt

HONOR KEY

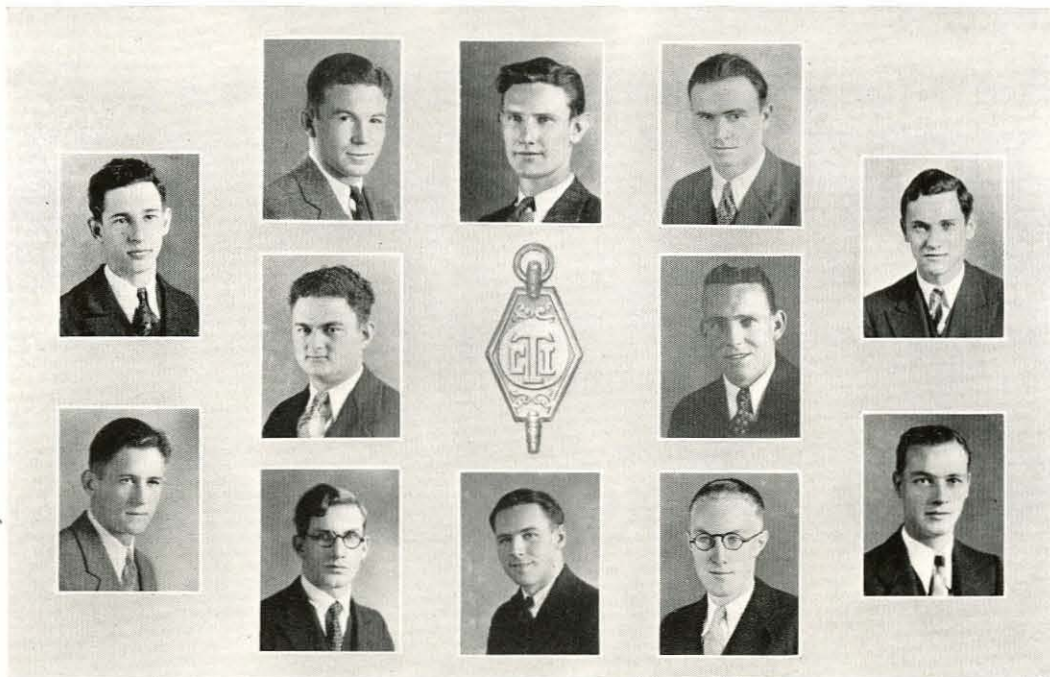
"The highest honor a Tech man can receive"—the award of an Honor Key. It is an award by the Associated Students to those men who have rendered distinguished and valuable service to the student body, and is the highest tribute given in recognition of this service.

As the scholastic standards of the Institute have been raised, so it has become increasingly more difficult for a man to participate in extra-curricular activities unless he is at the same time a very real scholar. And as the difficulty in receiving an Honor Key has increased, so has the competition become more keen, for the honor has increased accordingly, and the number of keys awarded each year is definitely limited to five per cent of the student body, with the Executive Committee acting as the final judge as to who are the most deserving of this recognition.

It is becoming increasingly apparent that the technically capable man who cannot live, work, and associate agreeably

with his fellow workers is not fitted to take up his work in life where the demand for leadership is just as great as the demand for technical experts. The courses given at the Institute certainly give the engineer or scientist a thorough and comprehensive training in that particular field he has selected to follow, and it remains to him to secure the experience in contacts and associations with his fellow students that proves so desirable in later life.

Every man who has had the ideal of an Honor Key before him will graduate with more than an excellent technical training, and this fact has been so strikingly indicated in the commercial field that most of the commercial firms and industries today accept only those men into their employ who have shown by their participation in college activities an ability to work with and to lead others. Without this ability and experience, one cannot hope to rise far, for the complexities and ramifications of modern business demand an ability to



Roach
Watson

Brooks
Grafman
Buffum

Labory
Lehman

Wineland
McMillan
Amann

Langsner
Smith

meet and solve personnel, human, and industrial relations problems that were until recently non-existent and unheard of. It is this fact that is causing industrial leaders to look beyond a man's technical ability when selecting employees.

The following list of those receiving

Honor Keys is correct and final up to the time of going to press, though it is possible that two more awards will be made before the end of this year. The asterisk before the individual's name indicates that that person has received an Honor Key previous to this year.

CLASS OF 1931

Jack H. Amann
Arthur C. Brooks
C. Emory Buffum
Walter L. Dickey
*Lawrence L. Ferguson
A. Jack Grafman
William D. Hacker Jr.
Raymond F. Labory

George Langsner
Robert M. Lehman
John R. McMillan
*Leland D. Pratt
*George S. Rice
Robert G. Smith
Charles K. Stipp
Jeff A. Wineland

CLASS OF 1932

*Paul F. Arnerich
James R. Bradburn
Robert B. Freeman

*Clark Goodman
Cecil L. Killgore
Harold Roach

George G. Watson



Arnerich
Freeman

Ferguson
Goodman
Stipp

Dickey
Bradburn
Hacker

Killgore
Pratt

HONOR KEY

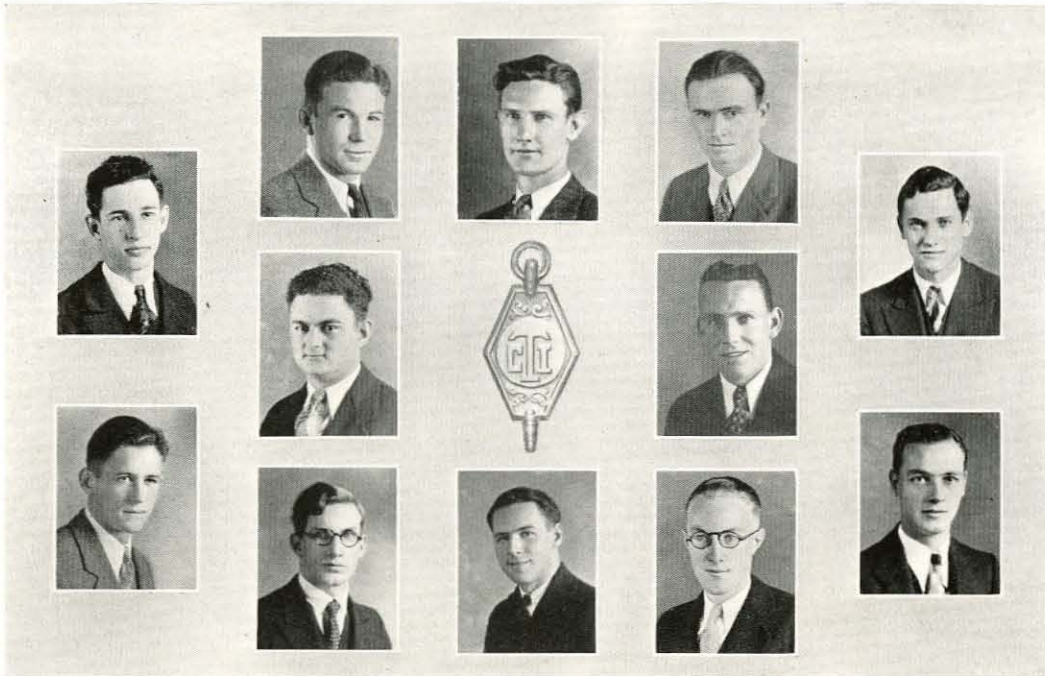
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CLASS OF 1932

*Paul F. Arnerich
James R. Bradburn
Robert B. Freeman

*Clark Goodman
Cecil L. Killgore
Harold Roach

George G. Watson



Gregory
Alden

Leeper
Stipp

Anderson
Smith

Griffin
Amann

TAU BETA PI

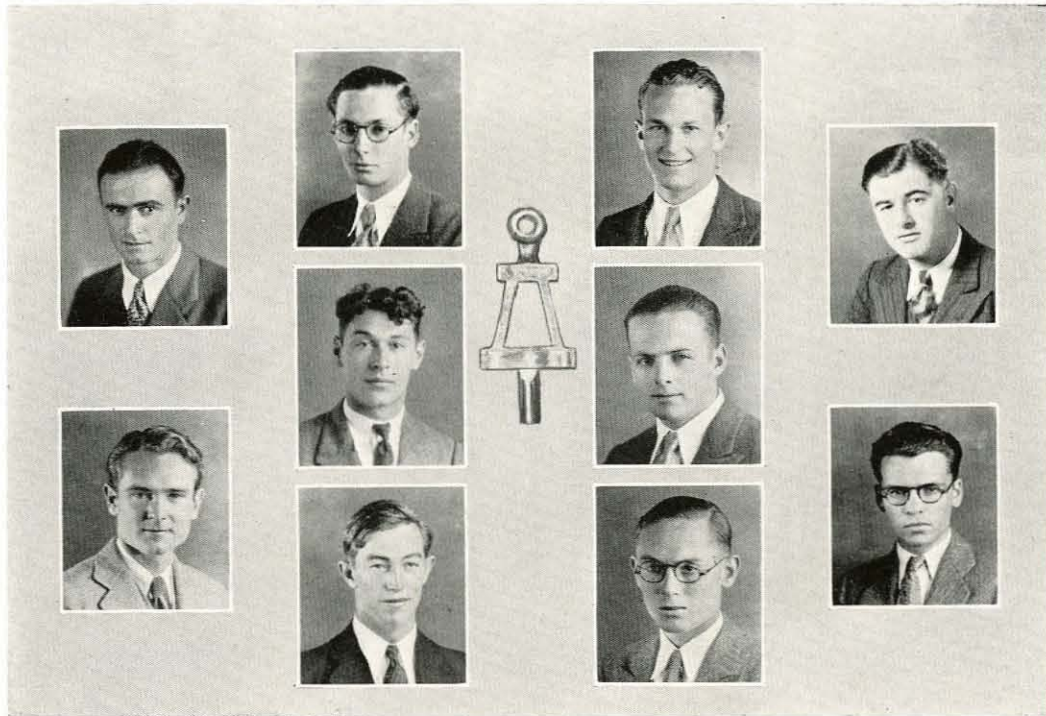
Cal Tech is the seat of the California Beta chapter of the Tau Beta Pi Association which occupies among the engineering colleges of America much the same position that Phi Beta Kappa occupies in colleges of liberal arts.

The association is the oldest and largest of its kind, having in excess of eighteen thousand members and fifty-six chapters. It owes its beginning to Professor Williams of Lehigh University in Pennsylvania who as a Phi Beta Kappa saw the need for such an organization among engineering schools, and accordingly the association was founded in 1885.

Although Tau Beta Pi is similar to Phi Beta Kappa in many of its aims, it is more like a fraternity in the methods of its actions. Members are not chosen merely on their scholastic rating, but are considered also on the merits and interest in school activities other than studies. The men who get into Tau Beta Pi do so after a process of elimination. There is first of all an eligible list as pertaining to scholarship. The highest eighth of the junior

class and the highest fourth of the senior class are each year eligible. A preliminary vote is taken to eliminate those who do not show sufficient and varied interests. Those still in the running are then quizzed orally as to their knowledge of many and varied things, a final vote is then taken and the new pledges announced. This voting segregates the "grinds" to a large extent from the final lot pledged and makes for an association of men who have other interests, as well as studies.

The general time of selection of men varies for the two classes. The seniors are selected and passed upon during the fall term, and initiated a short time later. The juniors wait until the second term for their selection, and as a rule are initiated shortly before the close of the term. During the week preceding the initiation a huge bent of the association is hung in Throop hall over Apollo. The large bent is very similar to the small gold bents or keys which are worn on the watch chains of the members, distinguishing them when they leave college.



Wineland
Mehl

Kircher
Matson
Gunderson

Morris
Kinsler
Peterson

Girard
Jacobs

FACULTY

Wm. Howard Clapp
Robert L. Daugherty
M. G. Donnelly
F. W. Hinrichs

J. L. Hoard
Robert T. Knapp
William N. Lacey
Donald F. Marshall

R. R. Martel
Robert A. Millikan
Arthur A. Noyes
Linus Pauling

Royal W. Sorensen
Franklin Thomas
Earnest C. Watson

OFFICERS

Laverne Leeper President
Maynard M. Anderson Vice-President
Robert H. Griffin Cor. Secretary
Carter H. Gregory Rec. Secretary
George Shull Treasurer

CLASS OF 1931

Lucas A. Alden
Jack H. Amann
Maynard M. Anderson
John E. Girard
Lowell F. Green
Ross E. Morris
Carter H. Gregory

Robert H. Griffin
Norman R. Gunderson
Robert Jacobs
Lawrence E. Kinsler
Carl F. Overhage
Raymond A. Peterson
Charles E. Kircher
Laverne Leeper

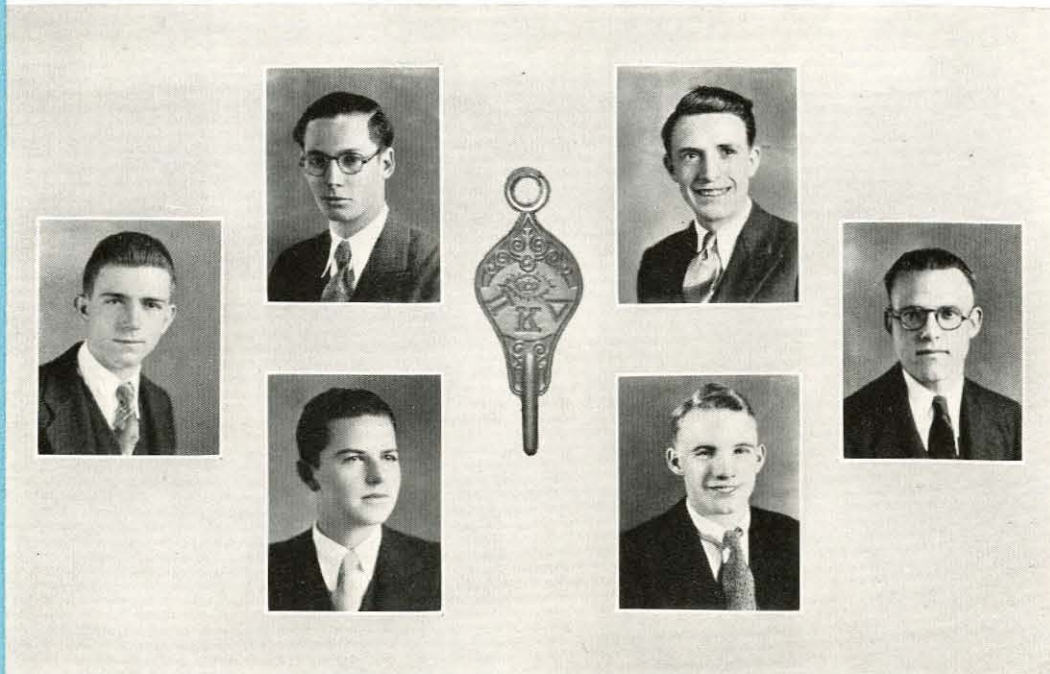
Harry Matison
John W. Mehl
George S. Rice
George Shull
Robert G. Smith
Charles K. Stipp
Jeff A. Wineland

CLASS OF 1932

David W. Anderson
James R. Bradburn
Clifford C. Cawley

Charles M. Harsh
Charles W. Jones
James E. Lipp
W. Hayward Pickering

Worrell F. Pruden
Joseph Sheffet
William Shockley



Ferguson

Kircher
Killgore

Ingham
Chamberlain

Jecker

PI KAPPA DELTA

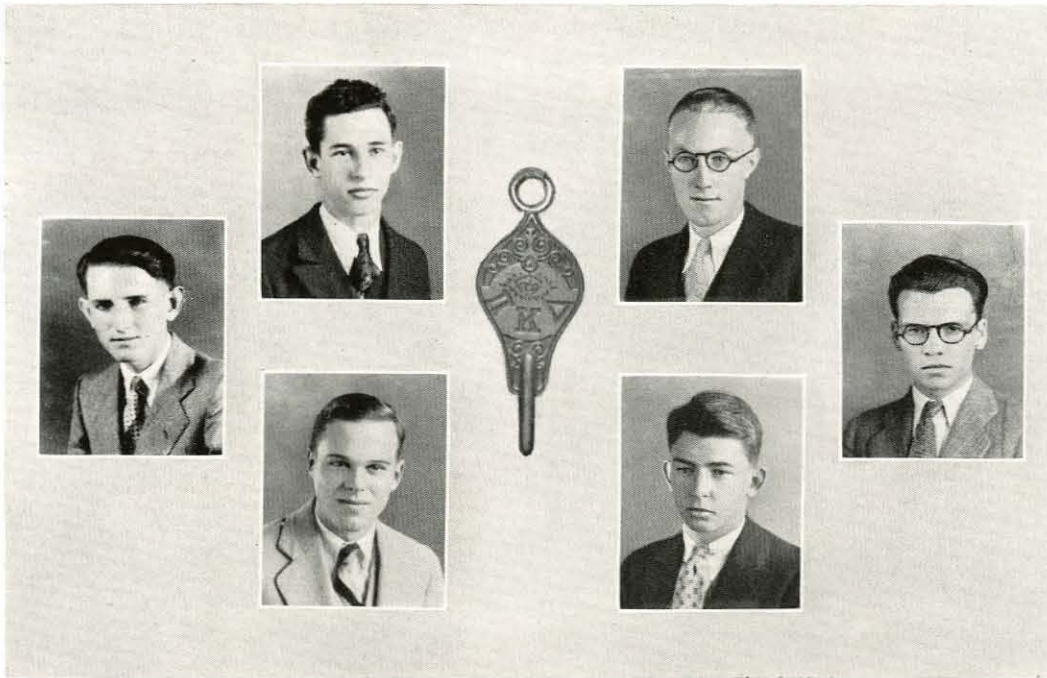
To develop personality is the outstanding salient accomplishment of Pi Kappa Delta, honorary forensic fraternity. Not only must a man be encouraged to have and develop new ideas, but he must be able to express himself. That is, to sell his idea through exact presentation. Pi Kappa Delta is giving this opportunity to its members who actively engage themselves in the activities which it sponsors.

Dr. John Macarthur, Dean of Freshmen, and former national president of Pi Kappa Delta, organized the California Gamma Chapter at Cal Tech in 1921. The immediate purpose of the organization is to foster a higher spirit of intercollegiate oratory, debating, and public speaking among the college groups with which contact is made. Since its formation the local chapter has increased the scope of its activity and has pushed itself forward into greater prominence in the national field.

Members are elected to this forensic society after they have shown their ability in intercollegiate debates and by their attitude in promoting better relations in the field of debating, oratory, and extemporaneous speaking. They have interests in these fields large enough to be an inspiration not only to members sharing their interests, but to their teammates as well.

Showing its versatility in interests, Pi Kappa Delta has sponsored the presentation of a Greek or Roman play for the last eight years. This year's Roman play, coming at the peak of the dramatic season, was an old classic, "The Braggart Warrior." The financial gain from these plays, augmented from private donors, is used to send delegates to the National Convention of Pi Kappa Delta, held every other year.

Robert Sharp and Francis Hutchinson last year won six debates at the National finals in Wichita before they were de-



Sheffet

Roach
Johnson

Amann
Davis

Jacobs

feated, a truly remarkable performance. Cecil Killgore, elected to the fraternity in his sophomore year, will be the chief contender for Cal Tech in the national finals next year.

Through its debating tours, the inten-

sive competition of national Conventions, and through its activity in dramatic presentations, Pi Kappa Delta is offering to Tech men an unlimited opportunity to get an insight on world problems through correctly directed study.

FACULTY

Mr. Gilmor Brown

Dr. John R. Macarthur

Mr. Ray E. Untereiner

OFFICERS

Charles E. Kircher President
 Herbert S. Ingham Vice-President
 Duroc A. Jecker Secretary-Treasurer
 Lawrence L. Ferguson Publicity Manager

CLASS OF 1931

Jack H. Amann
 Glenn J. Chamberlain
 Lawrence L. Ferguson

Francis W. Hutchinson
 Herbert S. Ingham

Robert B. Jacobs
 Duroc A. Jecker
 Charles E. Kircher

CLASS OF 1932

Cecil L. Killgore

Edwin M. Prudames
 Joseph Sheffet

Harold Roach

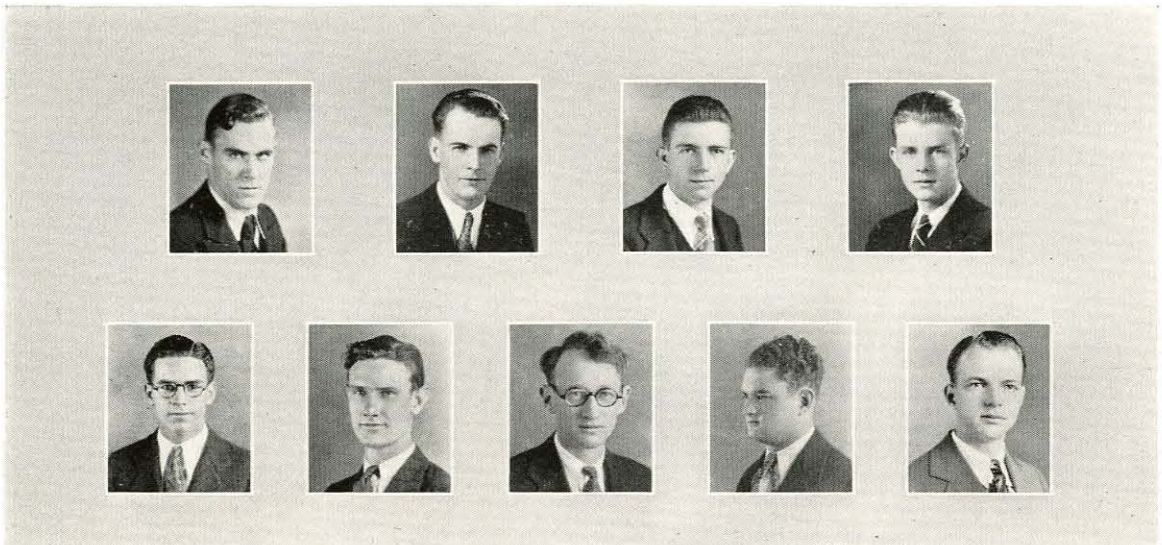
CLASS OF 1933

Madison T. Davis

Edwin S. Getzman Jr.

Stanley Johnson

H O N O R A R Y



Parsons
Lewis
Ferguson
Carleton
Stipp
Labory
Atwood
Grafman
Voak

PRESS CLUB

To develop a better type of journalism in the "California Tech" and in the "Big T" is the underlying aim of a group of undergraduates who have joined themselves together for this purpose in an organization known on the campus as the Press Club. It is largely due to the efforts of this group of men loyal to Tech and to its publications that it is possible to maintain the high journalistic style now exemplified in the weekly paper and in the year-book.

Besides journalism, this group is vitally interested in better literature. Meetings are held from time to time at which lively and enlightening discussions ensue on well known books, and magazine articles. Criticisms of plays or books are often topics for hot discussion as the Press Club's interests are very wide in scope.

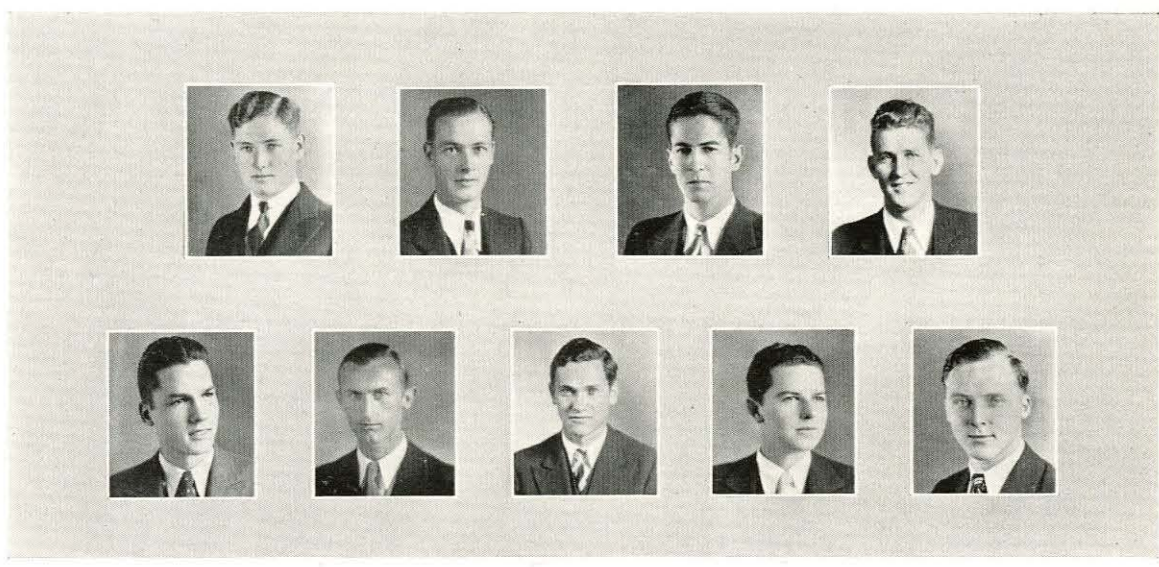
An excellent opportunity is made through connections with this group to enjoy the benefits of association with men who have similar interests, interests which center on the higher type of journalism, but which are broad enough to hold the interests of men whose thoughts turn toward literature, criticism or drama. A

new phase of discussion has held the center of the stage as many men in the club have brought up discussion on financing student publications. This has been a pressing problem this year with the depression that has made financing of publications difficult.

This organization is made up of men elected to membership who have shown their interest and initiative in writing for the Student Body publications, and is an unusual group in that it is composed of men who combine engineering or scientific ability with an interest in literary endeavor. Membership is open only to the sophomores, juniors and seniors who have demonstrated that they have exceptional talent and interest in journalistic attainments.

The annual "Tech" and "Big T" staff dance is sponsored by this group. It is an enjoyable affair at which men with journalistic interests are guests of the members of the two staffs and of the Press Club. It is interesting to note in this connection that many of the most prominent members of the Student Body have exhibited the qualifications which warrant their admittance to this organization.

H O N O R A R Y



Rice
Smith
Terrill
Schoeller
Arnerich
Graff
Langsner
Killgore
Goodman

FACULTY

Dr. Harvey Eagleson Mr. William Huse, Jr. Mr. Louis W. Jones	Prof. Clinton K. Judy Dr. Arthur L. Klein Prof. George R. MacMinn
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GRADUATES

Emory L. Ellis Ernest E. Sechler	Robert I. Stirton George F. Taylor
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OFFICERS

Charles K. Lewis	President
Lawrence L. Ferguson	Vice-President
Lee Carleton	Secretary
Paul Parsons	Treasurer

CLASS OF 1931

Albert W. Atwood, Jr. Lawrence L. Ferguson A. Jack Grafman John B. Hatcher	Ray Labory George Langsner Charles K. Lewis	George Rice Bob Smith Charles K. Stipp Alfred S. Voak
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CLASS OF 1932

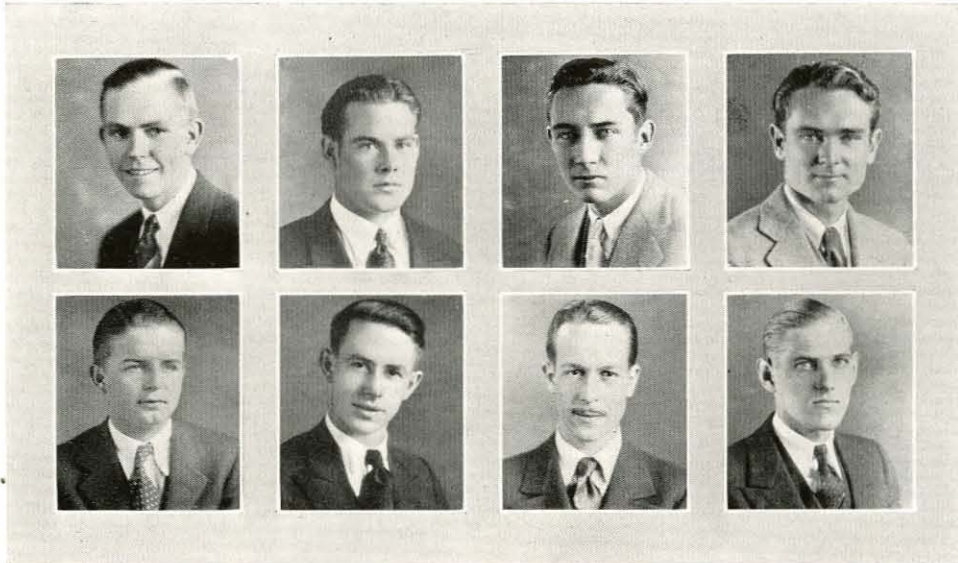
Paul Arnerich Lee Carleton	Paul Parsons Philip Schoeller	Don Graff Cecil Killgore
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CLASS OF 1933

Tom Terrill



H O N O R A R Y



Tillman
Boykin

Downie
Tarbet

Keachie
Sherman

Mehl
Detweiler

DRAMATIC CLUB

To the commonplace world of fact and reason with its dull and monotonous requirements, the romantic fantasies portrayed by the drama offer a fascinating contrast. Amateur theatrical work has always been an important college activity, and men very often form societies in order to better realize the benefits derived from such work. The Dramatic Club is such a society composed of men on our campus to whom dramatic work appears especially fascinating. It was organized in 1925 as an honorary society under the auspices of the English department and has since then continuously functioned as an active organization.

Each year new members are chosen to take the place of those who move on. They are chosen on a basis of their interest in dramatic work as indicated by some participation in this field. Though small be the part they may have played, membership in the Dramatic Club is to them an inspiration toward greater achievement, for this is the mark of a part well played—an honor bestowed upon them by men who have confidence in their abilities.

Though the club functions throughout the entire year, it is obviously impossible for the

members to partake continuously in dramatic work. It has therefore been the custom in the past for the club to present one modern play during the spring term, in which parts are open to all members of the student body. This year a one-act play was presented at a Friday assembly, and it is hoped it will be possible to present more of these in the future.

A great deal of the success of the dramatic work is due, not only to the student actors, but also to the co-operation of the Pasadena Community Playhouse. Through its staff excellent directors are obtained, and women actors are procured to take the parts of female characters. It is through just such co-operation that the high quality of dramatics produced at Tech is possible, and we feel distinctly fortunate in being able to enlist the aid of the Playhouse staff.

As an honorary society, the Dramatic Club has long felt the need of a proper insignia to designate its position. During the last year, therefore, it was decided that the club adopt a key to be worn by its members. This move, it is felt, will serve to unify the club and to distinguish it as an honorary society.

H O N O R A R Y



Nelson
Voak
Jecker
Amann
Haynes
Schiller
Roach
Simpson

HONORARY MEMBERS

Mr. Gilmor Brown
Dr. Harvey Eagleson
Mr. William Huse, Jr.
Prof. George R. MacMinn

OFFICERS

E. C. Keachie
President

Alfred S. Voak
Vice-President

Bryant Fitch
Treasurer

Wesley W. Nelson
Secretary

Harold Roach
Publicity Director

CLASS OF 1931

John S. Detweiler
Duroc A. Jecker
E. C. Keachie
John W. Mehl
Tom Tarbett
Alfred S. Voak

CLASS OF 1932

Bryant Fitch
Ben Haynes
Harold Roach
Robert L. Sherman

CLASS OF 1933

Arthur J. Downie
Wesley W. Nelson
Winchell Simpson
Charles E. Tillman

CLASS OF 1934

Robert Boykin
Harold Schiller

H O N O R A R Y

VARSITY CLUB

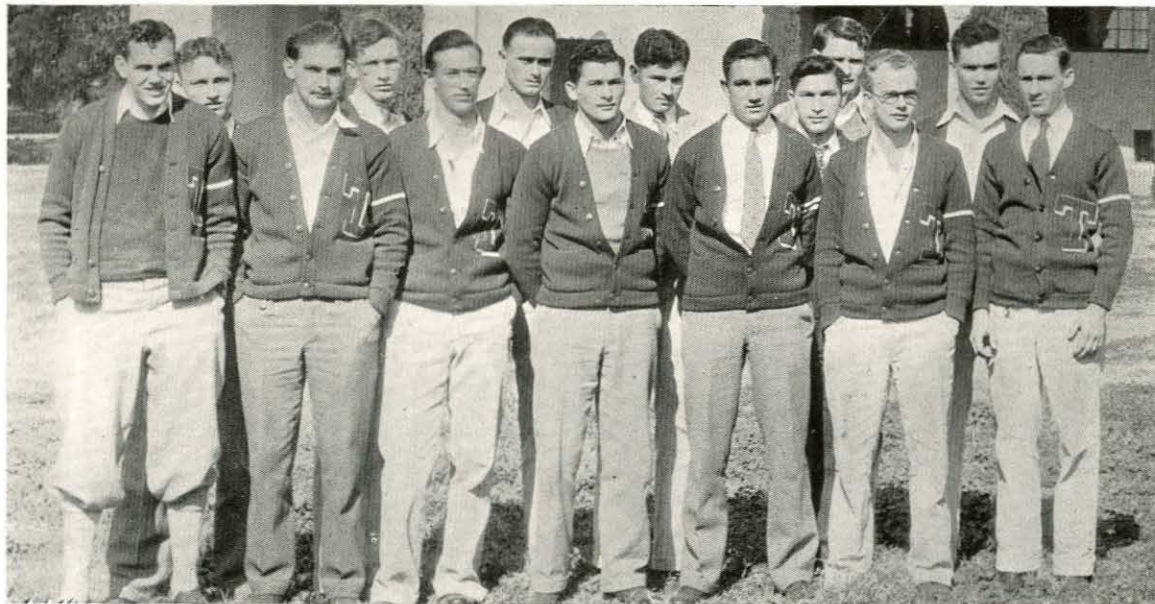
Golden pendants shaped in the form of a "T" hanging from the watch charm of many prominent Tech men indicate that the wearer is a member of the Varsity Club. Men displaying these distinctive pieces of jewelry are elected from the athletes who have earned a varsity award in football, basketball, baseball, or track. The only exceptions to this rule are senior managers and minor sports lettermen for two years who are eligible to membership. Coupled with athletic ability the members have varied interests, including activity in student government, and in Tech social affairs. Each wearer of the coveted "T" must have distinguished himself as a gentleman in society and as a scholar in the classroom. It has often happened that this all around development encouraged by the Varsity Club has prompted athletic teams to scholarship above the student body average.

Not only into their own numbers, but into all men with whom they come in contact, the varsity club men instill a fighting spirit and a desire to win fairly and cleanly. Their ideals

prompt a man to help an injured opponent on the gridiron or to give a word of encouragement or suggestion to a rival on the track or field.

The willing hand of the club extends into another field as it does its share towards maintaining the Athletic Fund which provides the necessary money to give complete and expert medical attention to injured players. Not only in this direction, but into many new realms the Varsity Club reaches with a helping hand to encourage some line of new activity. An attitude of cooperation both in word and spirit with the coach lending itself to fostering a higher group spirit, is one of the aims of the club.

When changing athletic conditions in the Southern California Conference are of such a nature that some old policy must be altered, the Varsity Club is always forward with a practical suggestion and the will to see that the adopted recommendation is carried out to the fullest extent of its ability. Always extending a helping hand in each field of endeavor we encounter active Varsity Club men.



Liedholm
McMillan

Buffum
Bernstein

Wineland
Gunderson

Rice
S. Cogen

W. Cogen
Eastman

J. Keeley
Simpkinson

McLaughlin
Pratt

H O N O R A R Y

On a warm spring evening, the eighteenth of April, a new crescent moon peeped down on a group of merrymakers at the San Gabriel Country Club as they participated in the big dance of the year sponsored by the club. These funsters have always believed in capping off an athletic year filled with hard work,

accompanied by its successes and failures, with a lighter variety of physical exertion to which they may respond. It was looked forward to as the climax of the social season; it is looked back on with memories of rustling silks, of blowing hair; just pleasure.

HONORARY

W. L. Stanton
H. B. Crosby

H. Z. Musselman

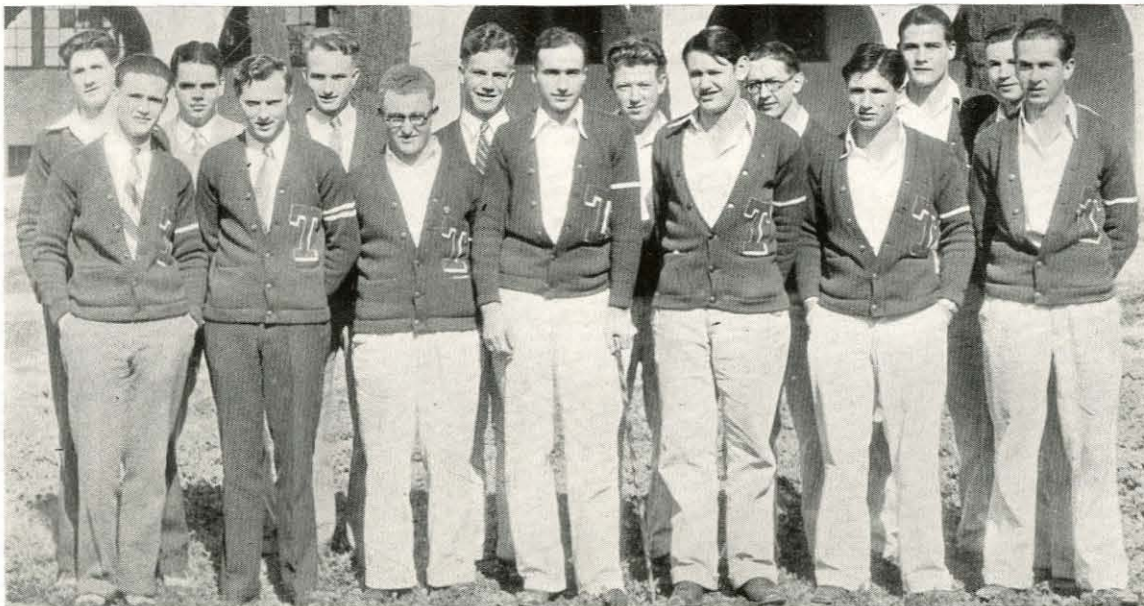
Layton Stanton
Dr. Floyd L. Hanes

OFFICERS

Walter Dickey President
William Cogen Vice President
Robert Freeman Secretary-Treasurer

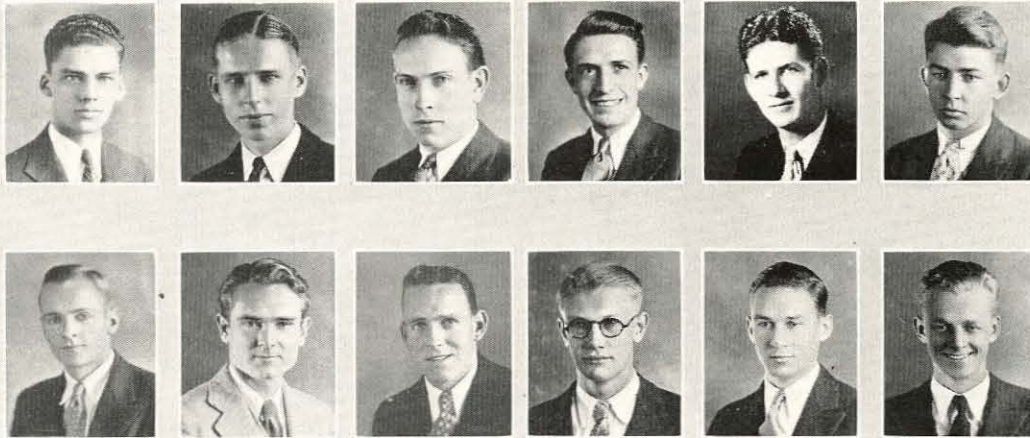
MEMBERS

T. Bernstein	W. Dickey	B. Holzman	J. McLaughlin	D. Scharf
A. Brooks	S. Eastman	S. Johnson	J. McMillan	A. Simpkinson
H. Bruderlin	B. Freeman	C. Jones	R. Morris	F. Skoog
E. Buffum	C. Goodman	K. Keeley	D. Murdock	C. Tutschulte
S. Cogen	D. Graff	L. Lani	O. Newby	G. Watson
W. Cogen	E. Green	G. Liedholm	B. Oaks	J. Wineland
T. Crawford	N. Gunderson	E. Levine	L. Pratt	R. Smith
E. Crawford	W. Hacker	R. Maas	G. Rice	J. Detweiler
C. Dickerman	E. Hayes	E. Mathews	W. Shuler	W. Pickering



E. Crawford Hacker Jones Newby Green Lani Bruderlin Brooks
 Johnson Goodman Murdock Oaks Dickey Holzman Mathews

H O N O R A R Y



Chambers
Morgan

Monning
Mehl

Franklin
McMillan

Ingham
Claussen

Bradburn
Pratt

Davis
Simpson

THROOPERS

The Throopers is an organization consisting of a small group of men who have their hearts set upon improving the spirit of the Student Body and of carrying out the work necessary for such spirit. The organization was founded approximately six years ago when it was found necessary to have a group to carry out certain activities.

At present the membership numbers thirteen men with four seniors, four juniors, and five sophomores. The men who were honored by their selection into the organization were: Pratt, McMillan, Ingham, Mehl, Bradburn, Claussen, Chambers, Roach, Davis, Franklin, Monning, Morgan, and Simpson. During the year three different presidents were selected. These were Mehl, Pratt and McMillan. Bradburn was secretary of the organization for the whole year and Franklin was treasurer.

Next year a new plan for the number of men goes into effect. Instead of having a number of seniors, that class's membership will be limited to two. The juniors will be limited to three and the sophomores four. Each year, therefore, one man from each class will be dropped, and only those men who show their interest by hard work will be carried. With the approval of the Ex-Committee each year

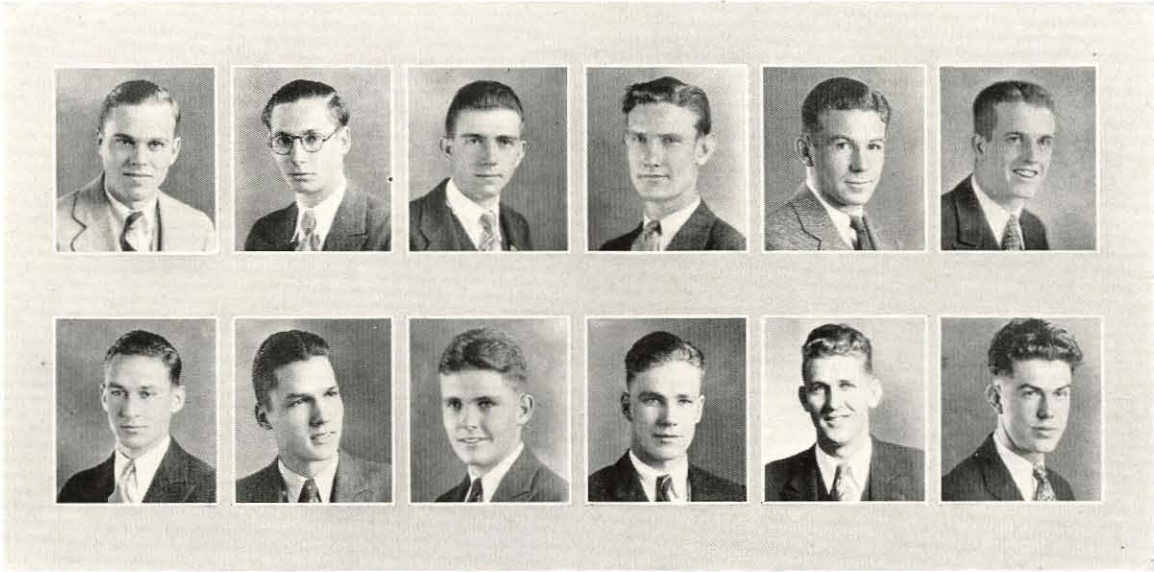
four new sophomores will be elected to fill out the total number to nine.

The Throopers have definite duties which they have assumed in connection with their general interest in activities. These are concerned mostly with supervision of rallies and student assemblies, and operation of all student bulletin boards. Other functions include the showing of visitors around the campus.

Starting the year off were many rallies held before football games. These certainly were responsible for the large amount of enthusiasm shown by the Student Body. Instead of the Oxy bonfire, which could not be held because of the fire hazard, a parade with torches to the game and into the stands was sponsored by the organization. At many games fireworks and stunts were given, much to the delight of everyone. At the Oxy game a new stunt of pulling card tricks under spotlights was tried.

The Throopers put on many successful assemblies during the year. Movie comedies marked a new means of entertainment. Each year the Throopers supervise and put on exchange programs with other colleges in the conference. Many Student Body dances, sponsored by the organization and held in Dabney Lounge, were very successful.

G E N E R A L



Johnson
Pratt

Kircher
Arnerich

Ferguson
Mathewson

Labory
Newby

Brooks
Schoeller

Freeman
Lewis

Y. M. C. A.

The first contact a Freshman makes when he comes to college is the Tech Y.M.C.A. A total stranger, the first year man meets upper classmen through the social life centering about the "Y." To find out where his place is on the campus he is given a handbook which gives him an insight into the life he can look forward to during his stay at college. Even before he reaches the campus he is invited to attend the Idyllwild Conference where he can become well acquainted with a group of campus leaders.

But the benefits the students receive have only begun when he becomes acquainted and is familiar with our ways. Many other conferences are held during the year that are open to the student body, the most notable of which is the convention at Asilomar during the Christmas holidays. At such meetings Tech men are given an opportunity to extend their acquaintances to other colleges.

Excellent speakers are secured for assemblies and special meetings through the influ-

ence of the Y.M.C.A. Notably this year Tech has been privileged to hear Mr. Paul Blanchard on the topic of "Racketeering" and Dr. Paul Popenoe of the Pasadena Human Betterment Association in three special lectures which drew many students to harken to his words of wisdom.

To relieve the monotony of text books the "Y" office is provided with lounges surrounded by reading matter of a more humorous nature. In keeping with this atmosphere, Charles Schwieso, Jr., always has time for a joke with anyone, or he can listen to a hard luck story and really feel sympathetic.

But when things are going wrong and a fellow needs a friend it is never too late to drop in at the "Y" office. Jobs of all description are handled through the Y.M.C.A. to help men who will work during their spare time in order to help pay their way through college. Social affairs are sponsored whereby new men may meet girls living in the vicinity.

OFFICERS

- Oscar Newby, Jr. President
- Lawrence Ferguson Vice-President
- Raymond Labory Secretary
- Arthur Brooks Treasurer

GENERAL

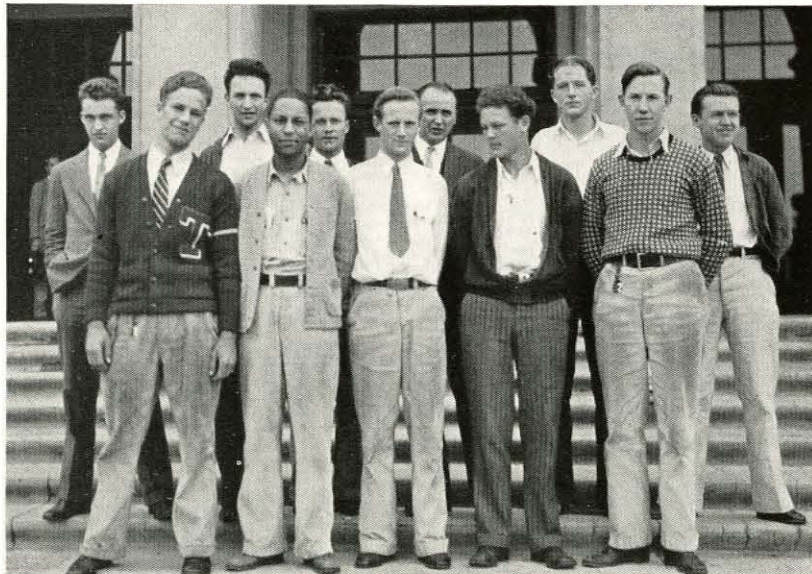
COSMO CLUB

William Pickering President
 Grant Venerable Vice-President
 Charles Perrine Secretary-Treasurer

MEMBERS

John Brohtz
 H. J. Bruman
 C. Y. Chao
 Lawrence Ferguson
 Andrew Haeff
 Gregory Hartmann
 H. J. E. Hausen
 Tetsiro Iwasaki
 H. Nagashi
 Oscar Newby Jr.
 G. Y. Ohashi

Carl Overhage
 Chas. Perrine
 Chas. Schwieso Jr.
 K. Skaredoff
 Folke Skoog
 Henry Suhr
 T. R. White
 Moses Widess
 Ruben Widess
 S. C. Woo



G E N E R A L

DORM CLUB

OFFICERS

George S. Smith President
 Hugh M. Rossire Sec. and Treas.

MEMBERS

Robert C. Anderson
 Robert D. Boche
 Harold Boehmer
 Harold C. Bradley
 Joseph P. Carr
 Jack T. Cortelyou
 Lamar H. Coward
 Herbert O. Cox
 Barry Dibble
 Robert A. Dietrich
 Edward B. Doll
 Willis R. Donahue
 George W. Downs
 Lewis F. Etter

William S. Everett
 Patrick M. Hannay
 Henry J. Hansen
 Francis F. Hebel
 Raymond E. Jackson
 Ford L. Johnson
 Dunford A. Kelly
 John R. Little
 Franklin J. McClain
 Andrew R. Mahr
 H. Allan Mitchell
 Morton E. Moore
 Wilson Murdock
 Nelson P. Nies
 Charles W. Patrick

Warren L. Patton
 Richard T. Powers
 Herbert S. Ribner
 Paul C. Roberts
 Albert J. Romoli
 Hugh M. Rossire
 Harold Schiller
 J. Robert Schreck
 George S. Smith
 Francis G. Tracy
 William A. Travers
 Raymond W. Traynor
 Fred M. Varney
 Francis W. Wyatt



PROFESSIONAL

AMERICAN SOCIETY OF MECHANICAL ENGINEERS C. I. T. STUDENT CHAPTER

OFFICERS

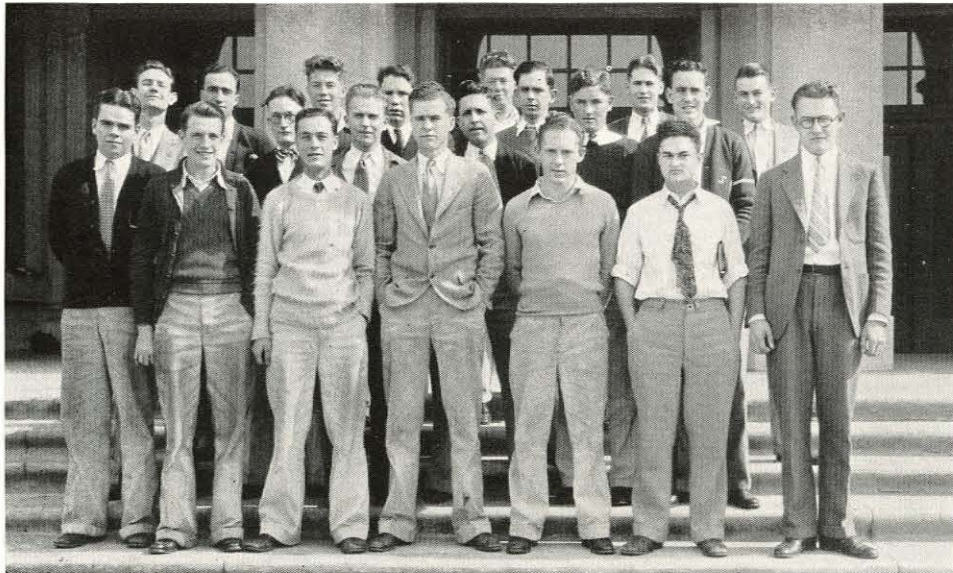
Prof. Howard Clapp Honorary Chairman
 Frank H. Ford Chairman
 George Rice Vice-Chairman
 John L. Bovee, Jr. Secretary-Treasurer

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Rea Axline
 Thomas Bell
 Merrill Berkley
 John L. Bovee, Jr.
 George Bussey
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 Charles Dickerman
 Lawrence L. Ferguson
 Frank Ford
 Jack Grafman
 Edwin Green

W. D. Hacker, Jr.
 Ben C. Haynes
 Herbert Ingham.
 Ted Jurling
 James Keeley
 Stanley Keenan
 Ray Labory
 Robert Lehman
 Jack McGarry
 John McMillan
 Howard Nagashi

Robert M. Oaks
 George Rice
 W. C. Robinette
 William Schultz
 Hubert Smith
 Robert Smith
 Carl Tutschulte
 George G. Watson
 William T. West
 Bob Wherritt



PROFESSIONAL

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 George A. Ross Vice-Chairman
 John E. Girard Secretary-Treasurer
 Prof. R. W. Sorensen Faculty Counsellor

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Charles C. Lash	Lloyd W. Russell
Edson C. Lee	David Sheffet
Arthur B. Nomann	George E. Lewis
Jack H. Amann	Carl F. Lind
Wm. Fred. Arndt	Edmund J. Longyear, Jr.
Paul F. Arnerich	Ennis G. Olmsted
Albert W. Atwood, Jr.	Bruce H. Rule
Charles Emery Buffum	Ferdinand E. Strauss
Glenn J. Chamberlain	Thomas V. Tarbet
Marvin W. Hall	Alfred S. Voak
Mills S. Hodge	Carl K. Yoshioka
Edward C. Keachie	David Zabaro
Edward S. Kinney, Jr.	



PROFESSIONAL

AMERICAN SOCIETY OF CIVIL ENGINEERS C. I. T. STUDENT CHAPTER

OFFICERS

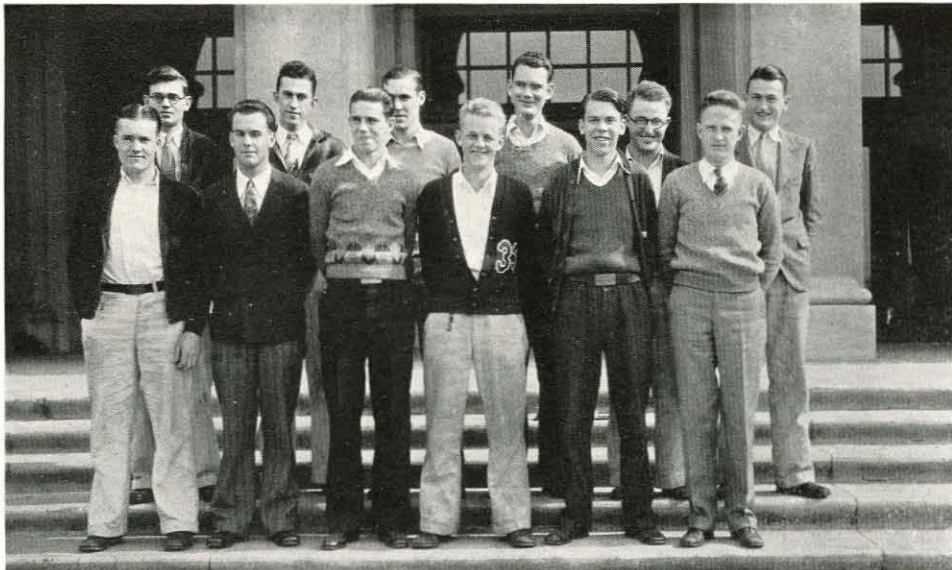
C. K. Lewis	President
Laverne Leeper	Vice-President
Philip Schoeller	Secretary
Perry Boothe	Treasurer

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J. C. Biggers
Maynard Anderson
Robert Griffin
George Langsner
Isadore Thompson
Arthur Brooks
De Wolfe Murdock

Oliver Harmon
Wm. S. Merrithew
Howard Smits
Winchell Simpson
Harlan Robinson
Stanley Keenan
Walter Dickey

Paul Parsons



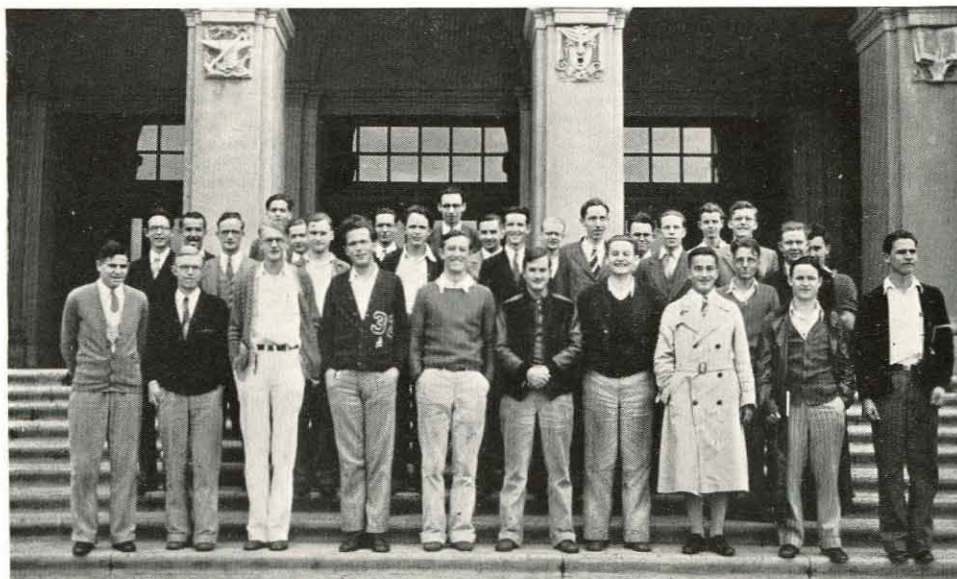
PROFESSIONAL

CHEM CLUB

Henry H. Bruderlin President
 George O. Shull First Vice-President
 Thomas R. White Second Vice-President
 William R. Bergren Secretary
 W. Ferdinand Eberz Treasurer

Edward Peer
 Charles Wilmot
 L. Jackson Laslett
 Everett W. Trostel
 Wm. J. Thomas
 Henry Bellis
 Bryant Fitch
 Allen Mitchell
 George Van Osdoll
 Walter Schmahl
 Lee T. Carleton
 Earl S. Hill

Willis Donahue
 Raymond W. Hoeppe
 Thomas Andrews
 Duncan Douglas
 Charles E. Kircher
 Elvin B. Lien
 Charles L. Welch
 John Boyle
 Alexander C. Charters, Jr.
 John L. Bender
 John E. Sherborne
 Glen Woodward



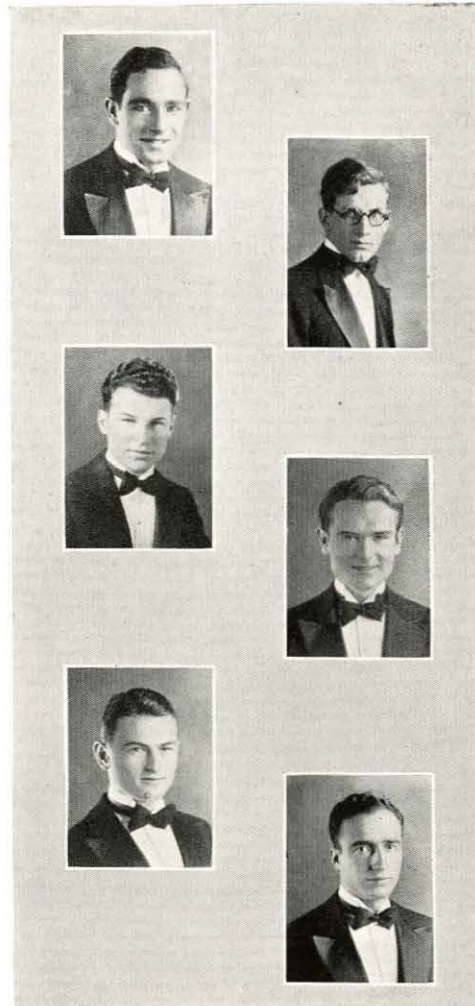




THEODORE VON KÁRMÁN

Of Göttingen and the California Institute: his vortex theories and their application are of high value both to heavier- and lighter-than-air craft. The efficient envelope of the "Los Angeles" was the result of his application of the theories for which he is responsible.

INTERFRATERNITY



Eastman
Buffum

Foss
Mehl

Smits
Oaks

The Interfraternity Council is composed of the representatives of the five social fraternities on the campus. The purpose of the Council is to foster friendly relations between the organizations and to act as a clearing house in the solution of the problems of fraternity life. In addition the Council sponsors the annual Interfraternity Ball which was held on May 16 this year.

This year the council was faced with the fact that the new student houses called for the extinction of the fraternities as individual organizations and the merging of their identities into the four new residence houses that will be opened for the first time next September. The Interfraternity Council played a prominent part in the acceptance by the fraternities of the program in the interests of all Tech students, rather than in their own.

The student body as a whole is grateful for

C O U N C I L

Chambers
Bell



Ferguson
Kent



Sherman
Dickerman



the action of the fraternities in dissolving as organized groups and becoming the nuclei of the new houses. The fraternities have played their part in supplying the need for an adequate social life for a portion of the student body, and now when the opportunity to help all Tech men secure the benefits of social contact with his fellows is presented, the fraternities have responded nobly for the greater good of a greater Cal Tech.

Sam Eastman President
Jack Chambers Secretary

GNOME CLUB	SIGMA ALPHA PI	PHAROS
Robert Oaks	Charles Dickerman	William Kent
Howard Smits	Sam Eastman	John Mehl
Robert Lehman	Philip Schoeller	Jack Chambers

PI ALPHA TAU
Thomas Bell
Lawrence Ferguson
Robert Sherman

GAMMA SIGMA
Emery Buffum
Robert Foss
William Rockefeller



GNOME CLUB



Hacker
Liedholm



Smits
Bradburn



Killgore
Labory



Hayes
Johnson



Rice
Tucker



Smith
Monning



Goodman
Russell



Oaks
Mathews



OFFICERS

Robert Oaks President
 Robert Lehman Vice-President
 Karl Hegardt Secretary
 Robert Carey Treasurer

FACULTY MEMBERS

Edward C. Barrett	W. Howard Clapp
Royal W. Sorensen	Stuart J. Bates
Clinton K. Judy	Ray C. Untereiner
Gilmor Brown	Horace N. Gilbert
Harry Van Buskirk	Romeo R. Martel

GRADUATE STUDENTS

G. Schild Lufkin



CLASS OF 1931

Arthur C. Brooks	John R. McMillan
A. Thomas Crawford	Robert M. Oaks
William D. Hacker	Leland D. Pratt
Herbert S. Ingham	George S. Rice
Raymond F. Labory	Robert G. Smith
Robert M. Lehman	Howard G. Smits
George E. Liedholm	Merrill D. Tucker
John F. McGarry	

CLASS OF 1932

Louis B. Behlow	Donald B. Graff
James R. Bradburn	Edward A. Hayes
Robert V. Carey	Karl E. Hegardt
Clark Goodman	Cecil L. Killgore
T. Edwin Mathews	

CLASS OF 1933

John K. Ayers	John C. Monning
Madison T. Davis	Jerome J. Muller
J. Stanley Johnson	Richard L. Russell
Samuel Y. Johnson	Robert L. Smallman
Bernhard N. Palm	

Carey
Graff

Pratt
Palm

McMillan
Brooks

Hegardt
Crawford

Davis
Lehman

Behlow
Johnson

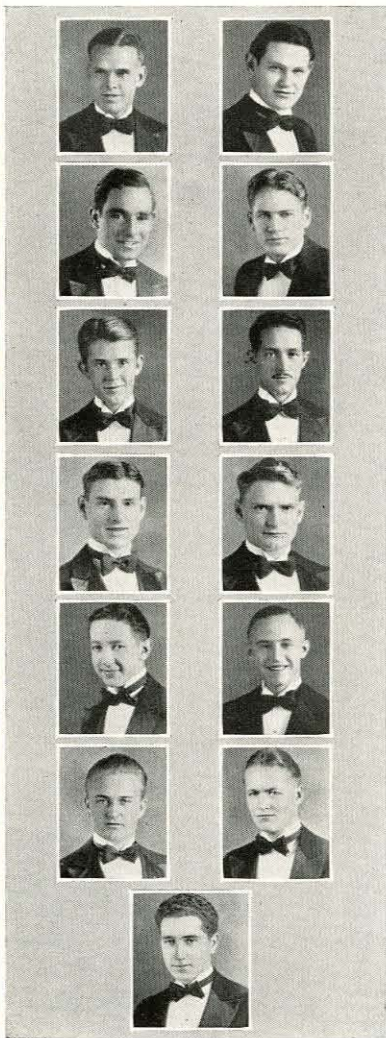
Ingham
McGarry

Muller





S I G M A A L P H A P I



Dickey
Dickerman

Jurling
Eastman

Cordes
Tutschulte

J. Keeley
K. Keeley

Maass
Lani

Foster
Craig

Schultz

OFFICERS

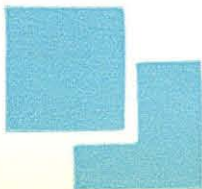
Sam C. Eastman President
Philip C. Schoeller Vice-President
Jan G. Schaafsma Secretary

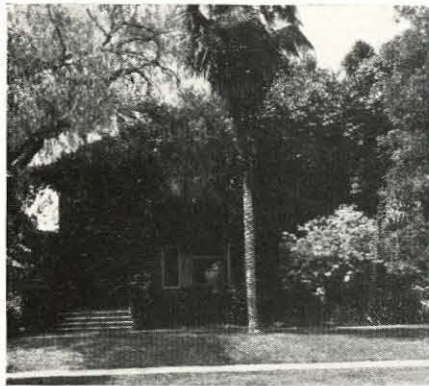
FACULTY

Arnold O. Beckman Graham A. Laing
William N. Lacey George R. MacMinn
Franklin Thomas

GRADUATES

J. Stuart Campbell Frank A. Nickell
Richard G. Folsom Homer C. Reed
W. Layton Stanton





CLASS OF 1931

Nelson M. Cordes	Sam C. Eastman
John H. Crawford	Theodore W. Jurling
Charles E. Dickerman	James H. Keeley
Walter L. Dickey	Carl A. Tutschulte
Jan G. Schaafsma	

Wherritt
Schaafsma

CLASS OF 1932

Kedric V. Keeley	Wendell R. Polk
Randall O. Maass	Philip C. Schoeller
Alvin J. Maes	H. William Schultz
John D. McKinley	George G. Watson
Glenn Myers, Jr.	Robert G. Wherritt

Polk
Watson

Matson
Mathewson

Clark
Downie

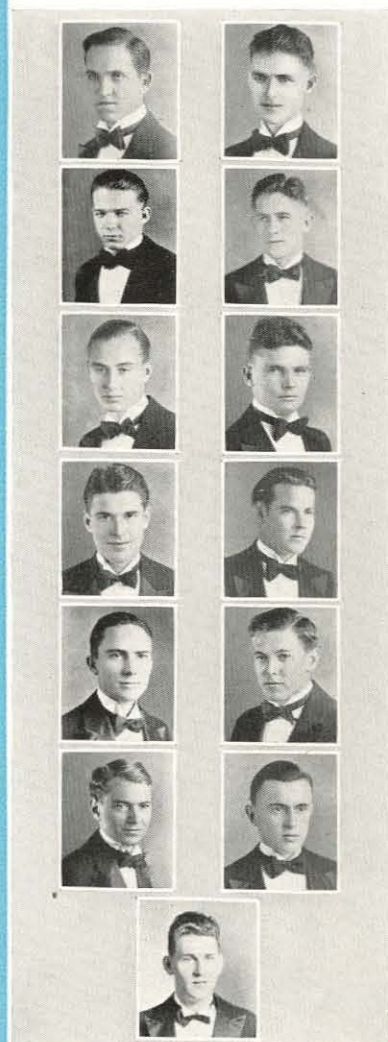
Fort
Sharp

CLASS OF 1933

David L. Clark, Jr.	Edward J. Matson
Philip H. Craig	W. Lyde McCleery
Arthur J. Downie	Robert R. Mead
Robert O. Fort	George H. Pickett
Robert C. Hogan	John W. Sharp
Arthur A. Mathewson, Jr.	Robert B. Grossman

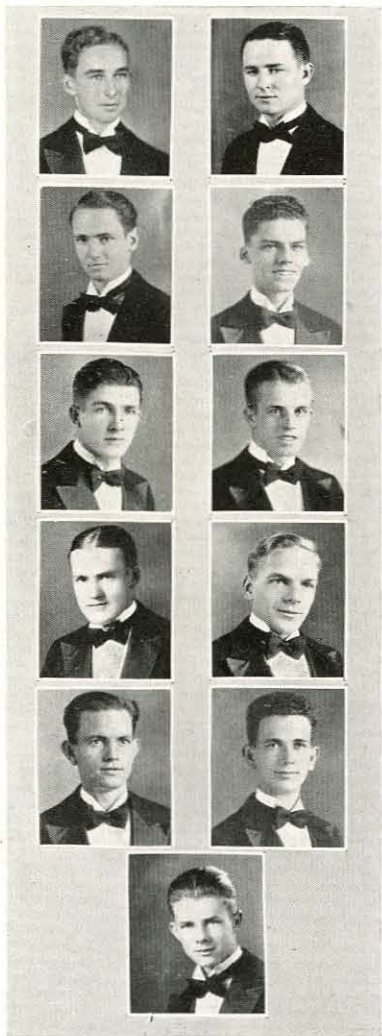
McCleery
Hogan

Schoeller





PHAROS



Andrew
Moore

- OFFICERS**
- John Mehl President
 Paul Parsons Vice President
 Charles Kircher . . . Receiving Secretary
 Mabry Van Reed . . . Receiving Secretary
 Charles Perrine . . . Corresponding Secretary

Chambers
Lentz

Freeman
Crawford

FACULTY

- | | |
|----------------|-----------------|
| Ira S. Bowen | E. H. Swift |
| Robert Knapp | R. M. Sutton |
| H. J. Lucas | E. C. Watson |
| A. A. Noyes | Ralph M. Watson |
| Ernest Sechler | Clyde C. Wolfe |

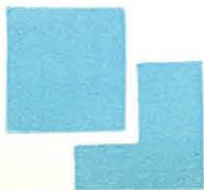
Harmon
Leeper

Folsom
St. Clair

GRADUATES

- | | |
|------------------|-------------------|
| Francis D. Bode | George A. Ross |
| Emory L. Ellis | Robert I. Stirton |
| Austin W. Strong | |

Carleton





CLASS OF 1931

Edward B. Crossman	Charles K. Lewis
John S. Detweiler	Charles E. Kircher
Theodore R. Folsom	John W. Mehl
Edward Kinney	Oscar M. Newby
Laverne Leeper	Mabry Van Reed

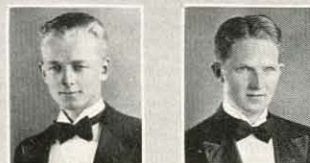
CLASS OF 1932

Paul F. Arnerich	Oliver Harmon
Jack V. Chambers	William L. Kent
Robert B. Freeman	Paul G. Parsons
Jackson Gregory Jr.	Robert St. Clair

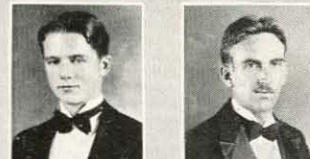
CLASS OF 1933

Thomas A. Andrew	John A. Lentz
Lee T. Carleton	William W. Moore
Edgar G. Crawford	Chas. D. Perrine
Winchell H. Simpson	

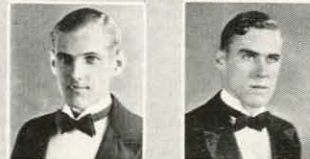
Simpson
Kent



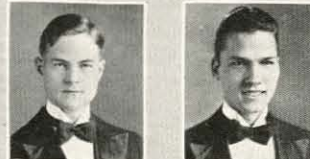
Perring
Crossman



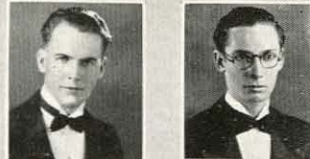
Detweiler
Parsons



Kinney
Arnerich



Lewis
Kircher

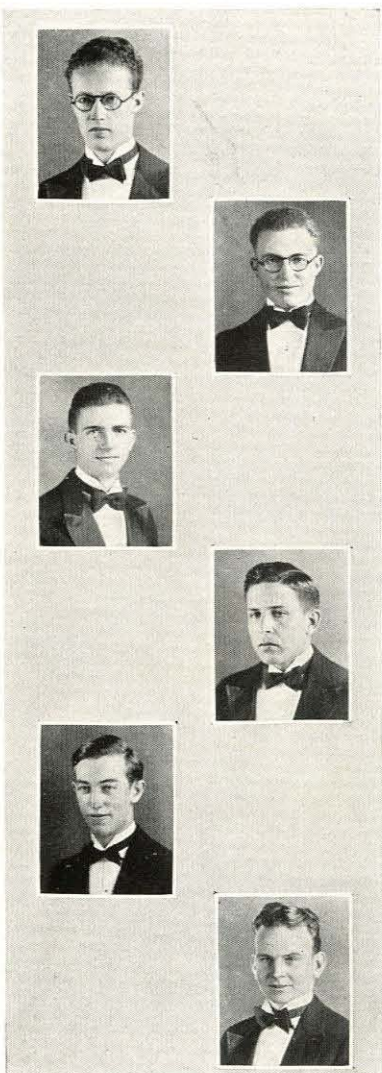


Newby
Mehl





PI ALPHA TAU



Coleman

OFFICERS

Thomas Bell President
 Robert L. Sherman Vice-President
 Lawrence L. Ferguson Secretary
 Tom Anderson Treasurer

Murdock

FACULTY

Ferguson

C. Hawley Cartwright Harvey Eagleson
 Fred J. Converse Francis W. Maxstadt

Bell

GRADUATES

Willard A. Findlay William C. Riggs
 Nathan D. Whitman

Gunderson

Secord



CLASS OF 1931

W. Fred Arndt	Lawrence L. Ferguson
Thomas W. Bell	Norman R. Gunderson
Robert P. Coleman	De Wolfe Murdock

Berkley



Sherman



CLASS OF 1932

Thomas F. Anderson	Robert L. Sherman
William Thomas	

Anderson



Brown



CLASS OF 1933

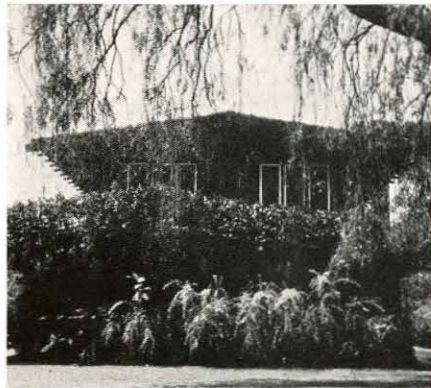
Theodore I. Bernstein	Merrill Berkley
Everett F. Brown	Grover M. Secord

Bernstein



Thomas





CLASS OF 1931

C. Emery Buffum	Raymond A. Peterson
Edward C. Keachie	Jeff A. Wineland

Haynes
Morgan

CLASS OF 1932

R. Edwin Foss	Henry B. Pownall
C. Fredrick Hamlin	Worrell F. Pruden
Benarthur C. Haynes	W. Curtis Rockefeller
John A. Hutchison	Bruce H. Rule

Pruden
Rule

CLASS OF 1933

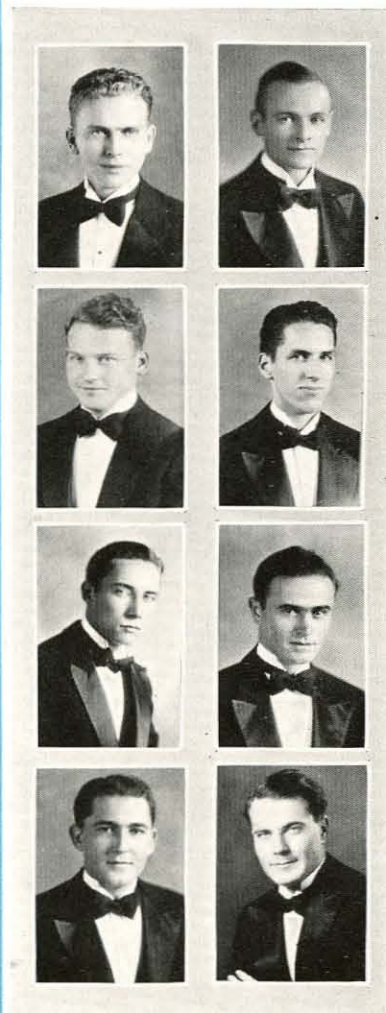
Robert D. Fletcher	Wyatt H. Lewis
Elmer S. Franklin	Wendell A. Morgan
Thomas S. Terrill	

Keachie
Wineland

CLASS OF 1934

Meral W. Hinshaw

Hutchinson
Pownall

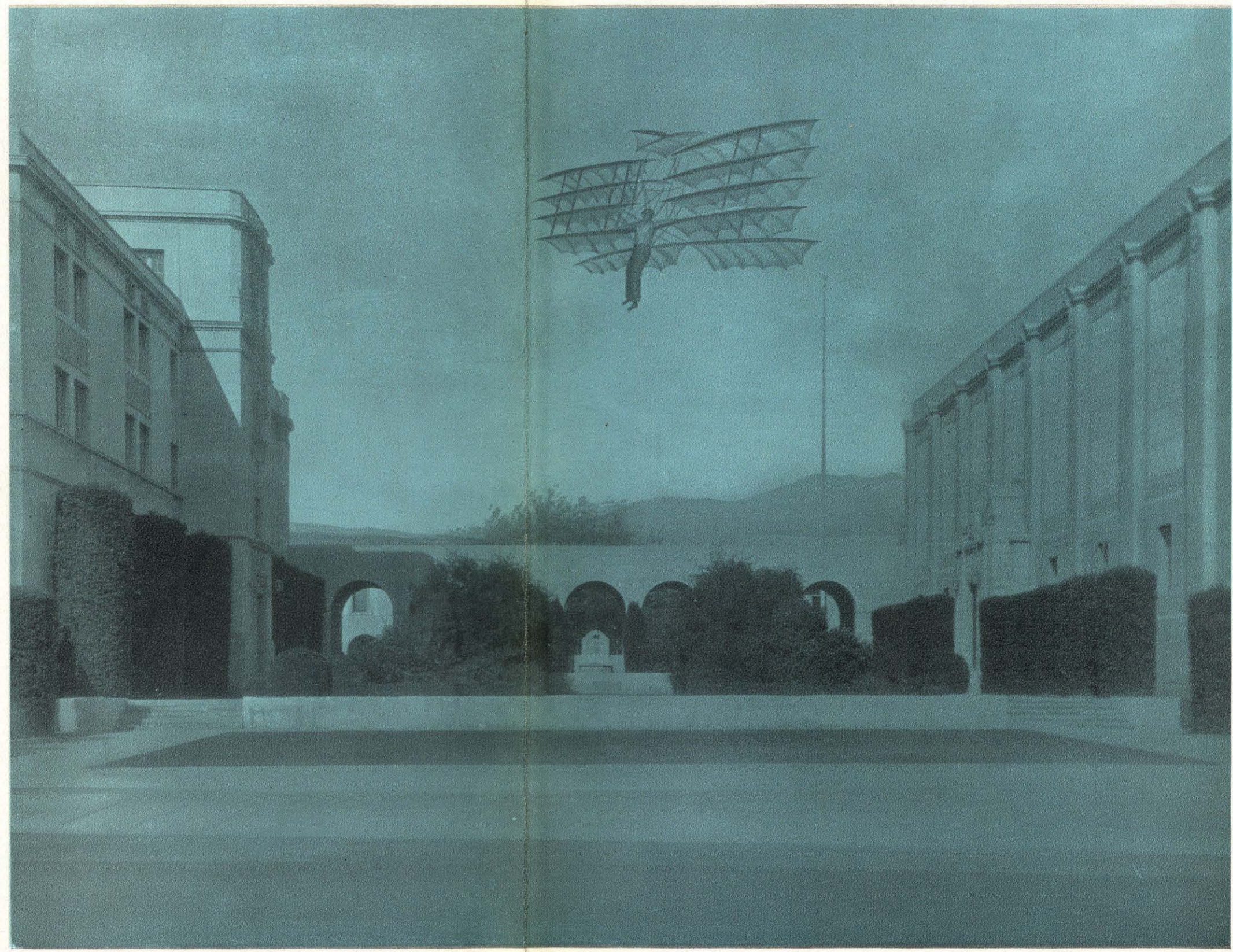


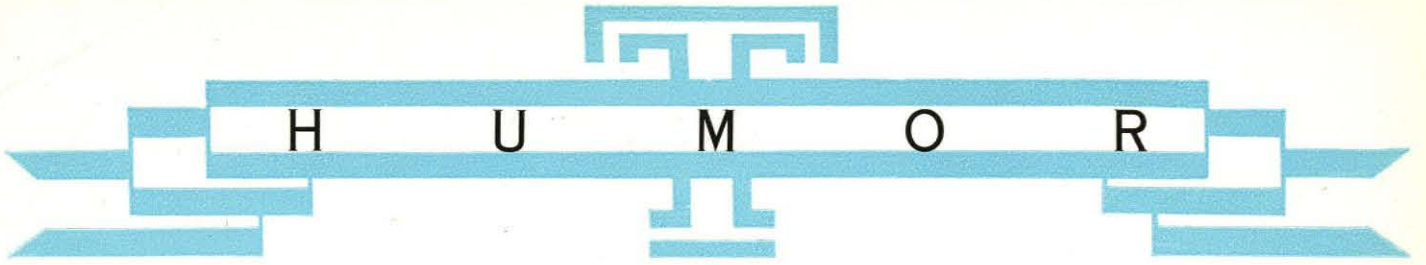
Let down the curtain, the farce is begun.

—Apologies to Rabelais.

BOOK IV

HUMOR





Wil Wite

THE NAME OF
AWARD SWEATERS



Recognized leaders in quality and craftsmanship, Wil Wite Award Sweaters are tokens of appreciation worthy of the schools presenting them and worthy of the honors the men have won.

Produced Exclusively By

OLYMPIA KNITTING MILLS, INC.

"At the End of The Old Oregon Trail"

OLYMPIA . . . WASHINGTON



Authorized Agents

SILVERWOOD'S

CAMPUS ROOM

SIXTH AND
BROADWAY

5522 WILSHIRE
BOULEVARD

LOS ANGELES





APPRECIATION

TO OUR ADVERTISERS

We wish to express our sincere appreciation of your support, especially during this trying year of business depression, and to assure you of our co-operation.

TO THE STUDENT BODY

Last year's "Big T" was a decided development in the evolution of year books at Tech, and the 1931 "Big T" has carried on this improvement to a remarkable degree. Through the untiring efforts of our editor, Larry Ferguson, there has been an improvement in every phase of the book. Five color inserts, three color opening section, and a new type of cover are only a few of the features in this book that make it one of the outstanding college annuals in California.

Without the helpful co-operation of our advertisers, the production of this year book would not be possible. It is therefore only right that the members of the student body show their appreciation of this support by in turn co-operating with these advertisers in preference to other business concerns. We earnestly urge you to patronize these advertisers who have made possible this bigger and better "Big T of 1931."

Business Staff,
THE 1931 "BIG T,"
CLARK GOODMAN,
Business Manager.

A D V E R T I S I N G



Harmony of Training and Skill

*"Men are valuable just in proportion as they are able
and willing to work in harmony with other men."*

—ELBERT HUBBARD

HEREIN lies the exceptional value of the service provided by the eye physician and Guild Optician.

The eye physician, through specialized training and medical experience, is thoroughly qualified to detect causes and prescribe treatment and lenses that correct faulty vision.

The Guild Optician has the skill and equipment to translate correctly the findings of the eye physician into properly fitted glasses.

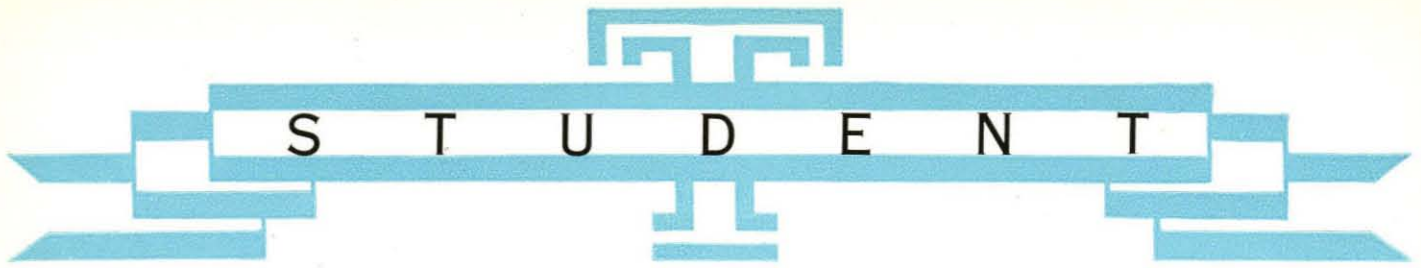
This cooperative service is your assurance of eye health and comfort.

ARTHUR HEIMANN
GUILD OPTICIAN

36 NORTH MADISON AVE. ♦ PASADENA
PHONE WAKEFIELD 7304

In Los Angeles: 542 South Grand Avenue

Parking facilities free to patrons

A large, stylized blue graphic featuring the word "STUDENT" in a bold, sans-serif font. The letters are white and set against a blue background that consists of various geometric shapes, including rectangles and lines, creating a modern, architectural feel.

STUDENT

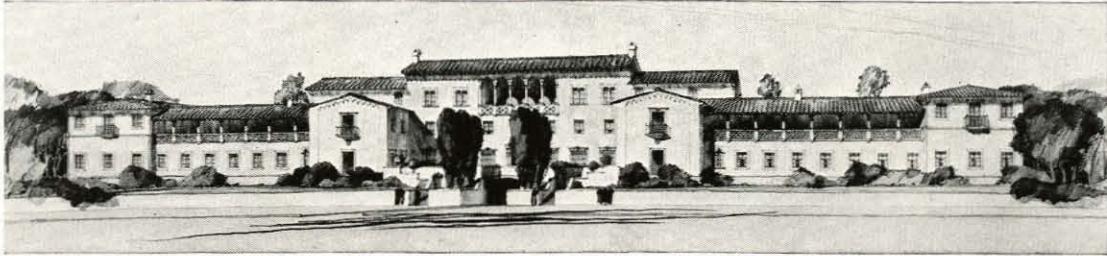


We have all been extremely interested during the past year in watching the new group of student houses gradually develop. Beginning with the steam shovel ground breaking on through to the present day, these houses have been uppermost in the minds of Tech men. Now that the quadrangle is nearing completion, we are all the more anxious to be one of the first occupants in such a magnificently designed and conveniently arranged group of houses.

Most men have probably been too busy inspecting the various features and enjoying the unique architectural design to consider the concerns who have been responsible for the production of such a beautiful group of buildings. It is therefore with appreciation for their co-operation and realization of their constructive ability that we ask you to consider the next few pages of advertisements of some of the concerns that have made these houses possible.



H O U S E S



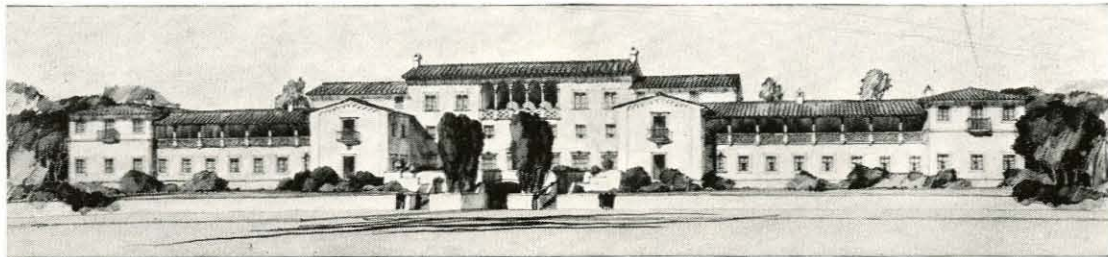
THE
UNDERGRADUATE HOUSES
WERE DESIGNED
IN THE OFFICE OF
GORDON B. KAUFMANN
ARCHITECT



610 UNION BANK BUILDING
LOS ANGELES - CALIFORNIA



H O U S E S



WM. C. CROWELL
BUILDER



495 SO. BROADWAY
PASADENA, CALIFORNIA





Football Equipment

by Wilson

famous Sporting Goods Makers . . .
and featured by **your own** enthusiastic Sporting Goods Store. **Dyas** makes the selecting of Football equipment for yourself and your team as easy as possible.

DYAS SPORTS SHOP — LOWER STREET
FLOOR
SEVENTH AT OLIVE — LOS ANGELES



Farmer: "I would like to buy a double-barreled shotgun, please."

Clerk: "Why, Mister Jones, I didn't know you had a daughter."

— o —

Then there was the insurance salesman who they said was full of brass, so he went out to prove his metal.

— o —

Fiddle: We went to see the Barber of Seville.

Dee: Did you get a hair-cut?

Fee: No; we just got trimmed.

— o —

You've got to carry cigarettes if you expect to have a drag with the women.

—Exchange.

— o —

There was once a studious lad so absent-minded that he even took notes in Economic History.

"They say Columbus was a great breeder."

"You mean he inhaled plenty of fresh air?"

"No—breeder. He crossed the Atlantic with three small ships."

—College Life.

— o —

Soph: "Say, Tom, I hear you failed on English Comp. Is that true?"

Frosh: "Yea, the prof asked me to write an essay on the 'Result of Laziness,' and I sent in a blank sheet of paper."

—Siren.

— o —

WHY NOT?

He: "Do you dance?"

She: "Yes, I love to."

He: "Great. That beats dancing any time."

—Soul Owl.

— o —

"I guess that's cutting a swell figure," said the chorus girl as she fell on a broken bottle.

—Yellow Jacket.

SMITH'S SONG

WARNING

"Bob told me I was the eighth wonder of the world."

"What did you say?"

"Told him not to let me catch him with the other seven."

—The Humorist.

A. O. Pi.: "Why the dopey look, my good man?"

Cig Alfie: "I was born late at night, and never caught up."

—Exchange.

She wasn't a lumberman's daughter,
But she was very, very knotty.

—Exchange.

No matter how thin you slice it, it's still a
golf ball, old duffer!

—Exchange.

The song of the bankrupt bootlegger: "The
Moon is Low."

They call my twin brother "Encore" because
he wasn't on the program.

—Old Maid.

GONE

Oh be she went
Or am she gone?
Oh, have she left poor I alone?
Oh, cruel fate, how thus unkind
To take she 'fore
And leave I 'hind.
Oh—can it was?

—Battalion.

"Hurray! An ancient prejudice has been
removed," shouted the butcher as his aged
mother-in-law fell into the sausage machine.

—Purple Parrot.

Pup: "What have you got out of this course
to date, Mr. Smith?"

Pet: "Well, sir, there's Jane and Flo and—"

—Rammer-Jammer.

ARTISTIC

PHOTOGRAPHY

EXCLUSIVELY

AUSTIN STUDIOS

*Located in All Leading
Cities of California*



SPECIAL RATES TO GRADUATES

ROACH REACTS

Compliments of

BELL & COOLEY DRUGGISTS

CORNER WILSON AND COLORADO

PHONE WAKEFIELD 4970

"Pasadena's Family Drug Store"

"Harry surprised me by telling me that we're going to take our honeymoon in France."

"How nice, and how did he spring it on you?"

"He said as soon as we were married, he would show me where he was wounded in the war."

—Wisconsin Octopus.

Little Boy: "May I go out and play, mother?"
Mother: "What, with those holes in your pants?"

Little Boy: "No, with the boys in the drug store."

—Log.

— o —
"Mumsie, what's a rubber check?"
"A garter, dearie."

—Lampoon.

For Social Affairs

CALL
Colorado 2611

We can supply the refreshments—the favors—the prizes and the bridge equipment. Also we carry a complete line of Cigars, Cigarettes and Smoking Accessories.

— — — — —
THE MODEL GROCERY CO.
250 E. Colorado St.
PASADENA, CALIF.

MAKE OUR STORE YOUR
HEADQUARTERS
FOR

BLUE PRINTS
PHOTOSTATS
and
DRAWING
SUPPLIES

QUICK RELIABLE SERVICE

PASADENA BLUEPRINT CO.
110-12 EAST UNION ST.
COLORADO
2601

R I C E R A T E S

The **WILLIAM WILSON Co.**

"OVER 35 YEARS OF SERVICE"

REAL ESTATE

INSURANCE

MORTGAGES

PROPERTY MANAGEMENT

40 No. Garfield Ave.

PASADENA

TERRACE 8111

HOT

Those Pilgrim maids were just as hot
As the ones we date today.
Woman alters not a jot
She behaves the self-same way.
It's true that lack of clothes will give
A wholly new sensation——.
The Pilgrim maids were just as hot,
But had more insulation!

—Purple Parrot.

She: "Oh, George has the most wonderful
pair of binoculars."

Also: "Has he? I dearly love these strong,
virile men."

—Satyr.

——— o ———
"Where are you going my pretty maid; why
do you pass me by?"

"I'm on my way to the gymnathic school," she
lisped as she heaved a thigh.

—Rammer Jammer.



The Royal

for

"UNEXCELLED LAUNDERING *and*
DRY CLEANING"

Telephone COLORADO 4311

B U S I N E S S — ?

AUTOMOBILE REPAIRING

TELEPHONE TErrace 1825

TAYLOR & KAPPLER

RICHFIELD ✓ RIO GRANDE ✓ SHELL GASOLINES

OILS - TIRES - BATTERY SERVICE

The Cal Tech Service Station

LAKE AND CALIFORNIA

PASADENA, CALIF.

He. "Don't you think George dresses nat-
tily?"

She: "Natalie who?"

—Bison.

Girl: "I want a pretty red lamp for my bed-
room."

Clerk: "But, madam, blue lamps are the
latest thing."

Girl: "Yes, but I know my own business."

—Mountain Goat.

*The Maryland Hotel extends a
cordial invitation to the Faculty
and Students for our social events.*

Music and Dancing



REAL SERVICE

A guest hurried up to the hotel clerk's coun-
ter. He had just ten minutes to pay his bill,
reach the station, and board the train.

"Hang it," he exclaimed, "I've forgotten
something. Here, boy, run up to my room—
No. 427—and see if I left my pajamas and
shaving kit. Hurry! I've only five minutes
now."

The boy hurried. In four minutes he returned,
empty handed and out of breath.

"Yes, sir," he panted. "You left them."

—The Dragon.

Them: "Why take an oil can on your date?"

It: "Have you never heard the saying, 'Oil
will make calm the most turbulent she?'"

—Froth.

Flapper: "I'd like to see the captain of the
ship."

Rookie: "He's forward, miss."

Flapper: "I don't care; this is a pleasure
trip."

—Ga. Tech. Yellow Jacket.

JOHNSON'S OWN

WUXTRY SPESHUL!

Reporter: "I've got a perfect news story."

City Editor: "The man bite the dog?"

Reporter: "Naw, a bull threw a Congressman."

—Battalion.

— o —

"I was out davenporting the other night and some one threw a brick through the window, hitting the poor girl in the side."

"Did it hurt her?"

"No, but it broke three of my fingers."

—Zip 'N Tang.

— o —

"There are lots of couples that don't pet in parked cars."

"Yes, the woods are full of them."

—Claw.

TERRACE 5194

ECONOMY MEAT MARKET

Wholesale and Retail

60 North Lake Ave.

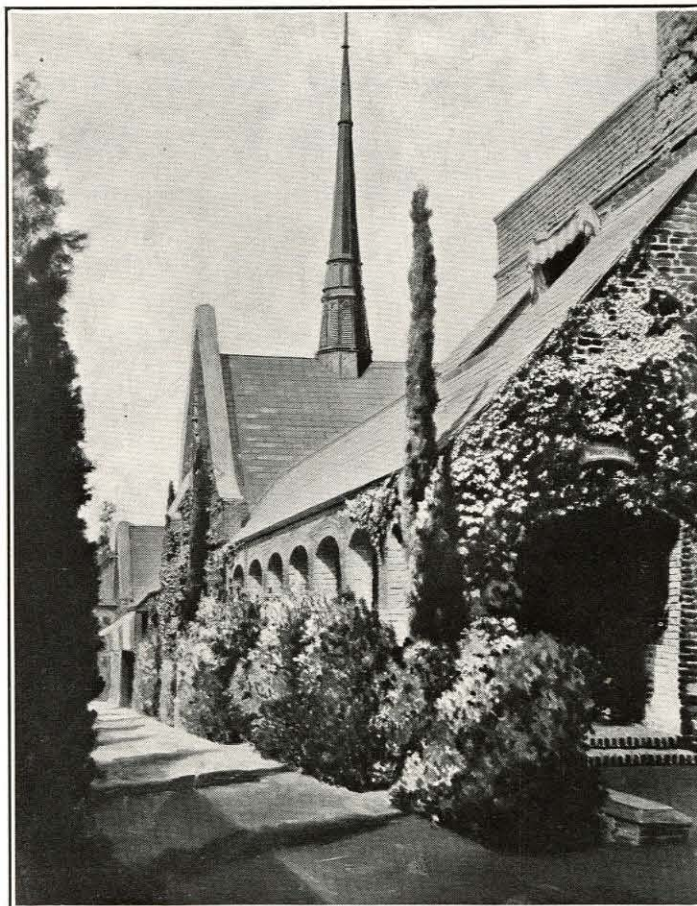
Pasadena, Calif.

She: "Every time I come to Louisville I have to change my heavy undies. You know I'm from Georgia."

He: "That so? I'm from Missouri."

She: "Sir!"

—Bison.



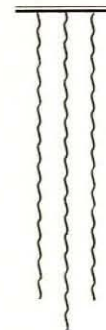
TURNER & STEVENS

Established 1895

FUNERAL DIRECTORS

N. Marengo Avenue
at Holly St.

PASADENA, CALIF.



Exterior view of the beautiful
Chapel of the Good Shepherd, 195
Holly Street, TERRACE 4156.

LEHMAN'S LINE

*Specialty on Corsages
for the boys*

WHITFORD FLOWER SHOP

Across from the Strand Theatre

343 E. COLORADO ST.

FREE DELIVERY

We Telegraph Flowers

*Man on Duty All Night
Push Bell on Door*

PHONE TERRACE 3214

NO DEBT

"All that I am," declaimed the politician, "I owe to my mother."

"Well," exclaimed a voice from the back of the hall, "doesn't it feel great to be out of debt!"

—Kirkcaldy Times.

— o —

First Stewd: "Who's your close-mouthed brother over there?"

Second Stewd: "He ain't close-mouthed. He's waiting for the janitor to come back with the spittoon."

—Sniper.

— o —

"Listen, big boy, I wouldn't marry you if you were the last man on earth."

"Baby, if I were the last man on earth I wouldn't have to get married."

—Voo Doo.

A PRE-MEDICS DICTIONARY

Brain: Something in the head which is supposed to retain lectures and telephone numbers.

Neck: Word of action used in "Applied" Anatomy. (Lab. periods Saturday and Sunday nights any place in the desert.)

Mouth: An organ into which one puts food and whistles through. Indispensable for a hot date.

Stomach: A cavity into which one puts hamburgers, alcohol, and pickles and receives in return indigestion and "D. T.'s."

Waist: Place to put belt and suspend trousers from. No definite location in female; depends on prevailing style;—anywhere from neck to—?

Legs: Organs of locomotion. Unnecessary handicaps when in parked or packed cars. Objects of keen interest on windy days.

—Arizona Kitty-Kat.

OVER 35 YEARS IN BUSINESS

C. L. WALLMAN & SON

Jewelers and Optometrists

Swiss and American Watchmakers

EYES TESTED—GLASSES FITTED

PHONE TERRACE 2667

847 E. COLORADO ST., PASADENA, CALIF.

NORDWALL FLOWERS

Successor to

ELDRED'S FLOWER SHOP

341 E. Green St., Pasadena, Calif.

TERRACE 4387

Telephone TRinity 6735

THE BUSINESS FURNITURE CO.

OF LOS ANGELES, Ltd.

848 So. Hill Street

Being an

Organization composed of the entire
Sales and Service force of the

LOS ANGELES DESK CO.

Let us Furnish your study rooms.

K E E L E Y C U R E

BOARDMAN'S DRUG STORE

"Always Reliable"

TWO STORES { 953 East Colorado Street, Corner Mentor Phone TE. 3663
 { 575 South Lake Ave., Corner California Phone WA. 6222
 FREE DELIVERY

"Hear about the Scotchman who was arrested for going down the streef naked?"

"No."

"He was on his way to a strip poker game."
 —Wisconsin Octopus.

— o —

He: "Hey, there's no swimming allowed here."

She: "Why didn't you tell me before I got undressed?"

He: "Well, there's no law against that."
 —Puppet.

— o —

First Mountaineer: "Wal, I see where Jake's wife had another datter."

Second Mountaineer: "Yes, that makes six. Reckon he'll have t' get a double-barrel if he wants t' get 'em all married."

—Sniper.

— o —

The commuter thinks that because he makes the train every morning he should call it **she**.

—Arizona Kitty-Kat.

Jimmy: "Mother, is it correct to say that you water a horse when he is thirsty?"

Mother: "Yes, darling."

Jimmy (picking up a saucer): "Well, then, I'm going to milk the cat."

—Log.

— o —

Daughter: "I'll bet you never saw dancing like this when you were young, dad."

Dad: "Yes, I did once—but the place was pinched before ten o'clock."

—Arizona Kitty-Kat.

— o —

Visitor: "How strange the college men dress."

Co-ed: "Yes, the juniors wear dirty cords."

Visitor: "What do the seniors wear?"

Co-ed: "Mustaches."

—Arizona Kitty-Kat.

— o —

Some of our older students give fervent thanks that they lived in the days when you could kiss a girl and taste nothing but girl.

—Aggievator.

L. J. BEISWINGER

1188 E. Colorado St. PHONE TERRACE 2094 Pasadena, California
 PASADENA TYPEWRITER & ADDING MACHINE CO.
 Woodstock Typewriters and All Makes of Portables—Good, Used Rebuilt Typewriters and Adding Machines, All Makes—Guaranteed One Year



UNDIVIDED RESPONSIBILITY

Every CLUB PIN
 SCHOOL RING
 MEDAL AND TROPHY
 GRADUATION
 ANNOUNCEMENT

We Sell . . . is made in our own factory.
 A California Industry - - Founded 1912

THE T. V. ALLEN CO.
 SCHOOL

Jewelers and Stationers

810-816 Maple Ave. Los Angeles

Crown City Dairy Co.

Home of

GOLD MEDAL DAIRY
 PRODUCTS

GOLD MEDAL
 ICE CREAM

Colorado at Mar Vista TERRACE 3181

'IRON MAN'



*Preferred by Thousands
as
a student's friend*

SEE OUR REPRESENTATIVE
IN DORMITORIES

RAYMOND AT DEL MAR
WAKEFIELD 4117

PASADENA
STATIONERY & PRINTING CO.
INCORPORATED
Located in the Downtown Section
COMMERCIAL STATIONERS
and PRINTERS

Greeting Cards for Any Occasion
Wedding Announcements, School
and Office Supplies

45 EAST COLORADO STREET
WAKEFIELD 4776

Louis Angel Firpo walked into a New York night club and was approached by one of the younger and more beautiful hostesses.

In high falsetto, she queried: "Are you Mr. Firpo?"

His answer in deep bass: "Yes."

In high falsetto: "Are you going to fight Jack Dempsey?"

In deep bass: "Yes."

In high falsetto: "Are you the wild bull of the pampas?"

In deep bass: "Yes."

In very high falsetto: "Moooooo."

—Lampoon.

OKLAHOMA HEADLINE

Mother of Two Gives Mate Some Credit.
Fair Play.

—Annapolis Log.

Graduate: "I'm looking for a job, sir."

President: "You look pretty good to me, but we can't afford any more help at present."

"But I won't be much help, sir."

—College Life.

"What makes you say you get along well with that girl?"

"Well, she does the wrong thing at the right time."

—Pennsylvania Punch Bowl.

PASADENA PHONE: TERRACE 5144

LOS ANGELES PHONE: ELIOT 2257

Fosselman's
QUALITY MILK
Delicious Ice Cream

FOSSELMAN CREAMERY CO.

442-452 S. Fair Oaks Ave.

PASADENA

A M A N N S P E A K S

"After we sell, we serve"

L. A. Phone—ELiott 2145

FORTNER & LOUD



AUTHORIZED PASADENA DEALER

Terrace 3155-6-7

Free Pick-Up and Delivery Service

Parts and Repairs Until 10 P.M.

Gnome: "We're going to give the bride a shower."

Sigma: "Count me in; I'll bring the soap."

—o—

The girl who's never kissed a boy
Can scarce expect connubial joy.
A kiss is trifling, still we know
That mighty oaks from acorns grow.

—Lampoon.

—o—

Rastus: "Màh Math. prof suah are crazy."

Moe: "What's wrong, bo?"

Rastus: "Ah thinks a pie are round, but he thinks a pie are square."

—o—

"And, believe it or not, her skirts were four feet from the ground."

"Say, fellow—"

"Now, don't get excited. She was standing on a porch."

—College Life.

—o—

U. S. C. Man: "Something is worrying the team, today."

Stanford Man: "Maybe it's their income tax report."

"I'd like to look at some step-ins, please."

"Yes, Miss, something like you have on?"

—College Life.

—o—

"They say Helen of Troy was faster than Lindbergh!"

"Howzat?"

"She made Paris in two hours!"

—College Life.

The Greater Vista del Arroyo and Bungalows

On the Cool Banks of the Arroyo

New Grand Ballroom

Beautiful Gardens for Luncheons and Teas

Outside Terrace for Dancing and Dining

OPEN ALL YEAR

SPECIAL SUMMER RATES

PASADENA

CALIF.

Thirty-five dollar suits are not startlingly new — we admit it.

But here is what is new. Hart Schaffner & Marx tailoring, rich fabrics — fine style — all at \$35.

Up to the minute in style—up to the mark in quality and way above par in value

LEDDY'S, Inc.

170 EAST COLORADO STREET

'JOE COLLEGE'

20%
DISCOUNT
 on
**Laundry and Dry
 Cleaning**
 Left at the Office



SANITARY LAUNDRY

860 So. Fair Oaks
 COLORADO 3193

"Every time I see you I think of a famous scientist."

"Very kind of you. Who is he?"
 "Darwin."

Remember the Scotchman who was so close
 he got slapped?

—Drexlerd.

After taking several steppes toward necking my girl, she cried for Alp and said she didn't like to. Sweden do it anymore. On the way home I said, "Say baby, what's got India lately?" and she told me that she was tired of guys who used Greece on their hair, and who bought twenty dollar fjords and Denmarked them up with wisecracks. So seein' she was so franc about it, I left her. And now I'm Russian abroad who's been pretty Nice to me.

—Cornell Widow.

Mas: "Why isn't a dog's nose hot instead of cold?"

Stiff: "If it were, he'd burn the other dog."
 —Froth.

Coed: "Jack, are you sure it is me you are in love with and not my clothes?"

Jack: "Test me, darling."
 —Buccaneer.

Untereiner: "To what single thing do you attribute the large recent increase in marriages in the U. S.?"

MacMillan: "To the invention of the rumble seat, sir."

"It is not necessary for the cook and capitalist to sleep in the same bed."

—Evolution of Plant and Animal Life.

Good Gad, no. Think of the social structure.
 —Jack o'Lantern.

You'll have to give credit to lowly goldfish
 Who live all their life in a transparent dish
 And propagate their race
 Without a scandal or disgrace.

—Michigan Gargoyle.

SERVICE	Z. V. SHAW <i>Job Printing, Engraving, Embossing</i>	QUALITY
21-27 East Holly Street	TERRACE 7310	Pasadena, California

CAMERAS	"CINE-KODAKS"	DEVELOPING
KODAKS	F. W. REED & CO.	PRINTING
SUPPLIES	176 East Colorado Street	ENLARGING

WATSON KNOWS!

The lily and the lamb said, "We
Are symbols of virginity."
Which, at the time, quite baffled me
For which was she and which was he?

I never worried 'bout the lamb,
That is problem of some ram—
And yet (I may be very dumb)
Whence do the little lilies come?

—Lampoon.

The boy who's never kissed a girl
Can scarcely breast the social swirl,
For chivalry demands of him
He answer woman's slightest whim.

A woman's whim is ever this—
To snare a man's reluctant kiss,
And snaring it, to make him pant
For things that nice girls never grant.

—Widow.

Watson: "An awful lot of girls are stuck on
me."

Eastman: "Yes, they must be an awful lot."

MODERN DRAMA

Act I

It: "How come you only take May riding
when it rains?"

That: "Well, she never gave me a break
until one night we were caught in a storm, and
she was afraid of the lightning. I had to com-

Tech Students

*Make this your
meeting place*

BOWLING and BILLIARDS
INCORPORATED

Earl S. Davies, Mgr.

970 E. Colorado

Terrace 1341



Across from Colorado Theatre



20 Tournament Alleys - 11 Billiard Tables

fort her, and the worse the storm became, the
more comforting she needed."

Act II

It: "I see you married May!"

That: "Yeh, the car was struck by light-
ning."

—Lampoon—M. R.

MOTHER GOOSE PANTRY

1959 East Colorado St., Pasadena

Open from 10 A.M. to 2 A.M.

SANDWICH SPECIALISTS — CAR SERVICE

J. W. BEASLEY, *Manager*

Personalized Clothing

Tuxedo Service

dedrick's THE TUX SHOP

Entire 4th Floor, New Orpheum Building

Los Angeles

F I L L E R



Florsheim Shoes are more than smart—they're great for long service and as perfect fitting as shoes can be made.

THE FLORSHEIM SHOE STORE
60 EAST COLORADO STREET

I

Your legs are bowed.
Your knees are knocked.
Your eyes are green.
Your shapes just not.

II.

Your nose is pugged.
Your feet are flat.
I take you out.
Now, why is that?

III.

Your hips are wide.
Your clothes are bum.
Your hair is dyed.
Now, just how come?

IV.

I'll tell you the truth
For heart I have none.
You never say, "Stop."
You son of a gun.

—Widow.

Mother: "Wasn't it rather late when Sam went home last night?"

Ginger: "It was only about eleven-thirty, why?"

Mother: "I heard him say, 'Just one,' about two hours before he left."

— o —

MOONLIGHT AND ROSES

A moonlit path in the woods. Thoughtful maiden strolls aimlessly along. The beauty and life of the country surrounds her, beckoning with little leafy arms, luring her into the peace and tranquillity of nature about to retire. Sweet flowerlets, and budlets, and treelets about to fold up in sleep. Sleep! Dreamy sleep! Oh, what is so rare as a day in June?

The same path. The same moonlight. Almost the same place. A whistling youth. The solemnity of the scene fascinates him. He cocks his ear and hearkens to the whispers of the flowerlets, and budlets, and treelets. A swish! What is it? The maiden stands before him wrapped in the warm glow of the moonlight. A little shy at first, they stand enraptured. He finds his halting tongue and murmurs, "Fair maid, if thou be not in tune with this," indicating the pale face of the moon, "or these," sweeping his gaze over the flowerlets, and budlets, and treelets, "then begone!"

She drew nearer. With her voice in dulcet tones replied, "But I am; I glory in it. It's so beautiful, so ethereal. I am overcome. Oh! Words are so useless. Let's just forget words."

"Yes," agreed the youth, "let's just neck." And the flowerlets, and budlets, and treelets just wilted.

—Cornell Widow.

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Band Instruments*

*Popular
Sheet Music*



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117 E. UNION ST. COLORADO 4917

S U C C E S S

Botany Professor: "A female holly tree cannot grow berries unless a male holly tree is planted nearby."

Suspicious Student: "And just how do the pyramids reproduce?"

—W. Va. Mountaineer.

Mary Ellen: "I can tell you drive a motor car."

Goodman: "How, dearie?"

Mary Ellen: "Oh, by the way you use the clutch every time you come to the curves."

AN UNSUNG HERO

For hours, he had tossed feverishly. How long, he did not know. But now as the cold grey dawn came silently, he leapt from his restless pallet, resolved to act, to do what many others in his position had tried to do. But alas! and he trembled as the grim realization crept over him—practically none had ever succeeded.

Somewhere in the half light of the dawn a clock struck four. Bong. Bong. Bong. Bong. For a moment he wondered if he should turn back. No, he was no puny weakling, no shunner of peril. Besides it was too late. Too late? Yes, too late.

So steeled for his great adventure, and fortified by an unsullied conscience, he sallied forth to do or die. On the threshold he paused—but for a moment—to look back on the place that had been his home for such a short time. Would he return to the security of its four walls a success or a failure? His inner man quailed.

483-485 EAST COLORADO STREET

Siebrecht's House of Flowers

PASADENA

CALIFORNIA

The early morning breeze swept fitfully, bitingly about his forlorn figure as if to mock his errand. The silent, deserted streets in their loneliness made desolate his heart. Suddenly, another figure could be seen in the distance. A nocturnal ghoul, perhaps, returning from a sanguinary orgy to the steadfastness of his grave? Worse, by far. And now the strange figure, who trespassed the silence of the virginal morn broke into a frantic run. Nor did our hero tarry. He ran as no man had ever run before. He was gaining on his opponent! He was passing him!

At last his goal was in sight. Could he endure this terrific strain? Only the near future could tell. A prayer on his lips, he made one more almost superhuman effort. A moment more. Ah! He had done it. He was a success. He thrilled throughout his entire being. He was the first freshman, in fact the first student in the registration line.

—Cornell Widow.

Stanyer & Edmondson

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Pasadena
Terrace 6912



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So. Pasadena
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1431 East Colorado St.
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PASADENA

TELEPHONE
STERLING 1123

One Sunday two lovers went to church. When the collection was being taken up the young man explored his pockets and, finding nothing, whispered to his sweetheart, "I haven't a cent. I changed my pants."

Meanwhile the young girl had been searching her bag and, finding nothing, blushed a rosy red and said: "I'm in the same predicament."

—Exchange.

"Whaffo' you sharpenin' 'at razor?"
"Woman, they's a paih o' gemmun's shoes unde' you bed. If they ain't no niggah IN them shoes—Ah'm gonna shave!"

—Purple Cow.

— o —

TIME SERVICE

The local pawnbroker was aroused at 4 a.m. by a telephone call.

"What time is it?" asked a voice.

"What do you mean by ringin' me up at this unearthly hour to ask the time?" cried the pawnbroker.

"Well, you've got my watch," came over the wire.

—Two Bells.

— o —

She (fishing for compliments): "What do you like?"

He: "You for one thing."

She: "So that's the kind of a fellow you are."

—Bison.

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PASADENA, CALIF.

TELEPHONE
WAKEFIELD 6356

She was a pitcher's daughter, and you couldn't touch her curves.

—Owl.

— o —

"I'm a terrible ladies' man."

"Well, whadaya wanna hang around terrible ladies for?"

—College Life.

— o —

She was only a carpenter's daughter, but she bore me no mallets.

—Black & Blue Jay.

— o —

He: "Whassa difference between dancing and necking?"

She: "I don't know."

He: "Good! Let's dance."

—Red Cat.

— o —

Guide: "Now we shall see the sarcophagus of King Tut."

Bashful Old Maid: "I'd better wait here."

—Cornell Widow.

Indignant El Monte Farmer: "Say, look here, yer ain't gettin' as much milk from them cows as y'uster."

Shuler: "Nope, sorter lost my pull."

— o —

"Where yuh goin'?"

"Fishin'."

"What fer?"

"Oh, just fer the halibut."



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TAMALES
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Mother (to her son, aged three): "Dear, how would you like to have a little sister for Christmas?"

Son: "I'd love it."

Mother: "If you tell Santa Claus, he may give you one."

Son: "Wouldn't it do more good to tell dad?"

—Lampoon.

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LOS ANGELES

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First Englishman: "Charlie, did you hear the joke about the Egyptian guide who showed tourists two skulls of Cleopatra—one as a girl and one as a woman?"

Second Englishman: "No, let's hear it."

—Mugwump.

Hacker (carrying in limp form): "I've resuscitated your daughter, sir."

Father: "Then, by God, you'll marry her."

—Gargoyle.

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A GOOD PLACE TO EAT
**GOODFELLOW'S
GRILL**

12 EAST COLORADO

She: "Sometime I'm going to tell you all about myself."

He: "I'd sure like to know."

—Cornell Widow.

According to Augustus Dalrymple, a girl doesn't always lose her reputation when she gives a fellow the slip.

The following testimonial was received recently by a prominent tobacco manufacturer: "Gentlemen:

"When I was a boy I was unable to spit over my chin, but after chewing your cut leaf plug tobacco for over fifteen years, I can spit all over it."

—Octopus.

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PSYCHOANALYSIS ON THE FARM

or

BEHAVIORISM IN BEASTS

The thoughts of a rabbit on sex,
Are practically never complex.
A rabbit in need
Is a rabbit indeed;
And his actions are what one expects.

The nose of this dissolute mole,
Is, unhappily, deep in his hole.
He has never yet smiled,
For he learned as a child
That repression is good for the soul.

Artists' Model (awakening): "Ah! 'Tis the
dawn of another nude day."

—Reserve Red Cat.

Icehouse (Pi Phi): "You remind me of Nero."
Bradburn (Spr. P.): "Why?"

Icehouse: "Here I am burning up, and you
just fiddling around."

A CLOCK WATCHER

Abel: "Those are beautiful clocks in your
stockings."

Mabel: "Yes, and they don't need any
hands on them, either."

—The Parade.

"So your osteopathic practice is develop-
ing?"

"Yes—I'm beginning to do my work along
new loins."

—Widow.

"I want a dress to put on around the house,"
said the lady in the department store.

"How large is your house, madam?" in-
quired the new clerk.

—College Life.

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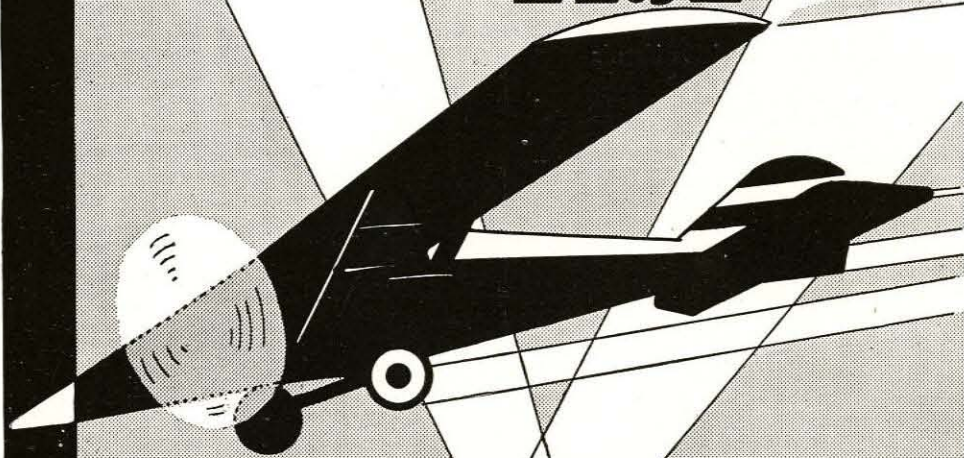
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1. White Star
2. Telephone
3. Gravy
4. New York Central
5. "Cross that——"
6. Fish
7. "I've never done this before."
8. Ray Ax——
9. Waist
10. Fe——

—— o ——

A saxophone is produced in America every forty seconds—or so we are told. It was estimated that if they were all piled in one place in the Sahara Desert, it would be a very good idea.

—Washington Dirge.

—— o ——

"Put your gun away, Mr. Blutz, I'm just trying to see if your daughter has a broken rib."

—Cornell Widow.

HE SAW THE QUEEN

A girl by the name of O'Neill
Played poker with some big shلاميell;
She sure was a pip,
He said, "Let's play strip!"
And the little girl got a good deal.

—Reserve Red Cat.

—— o ——

Wise Winnie says: "It isn't only during football season that the college boys make forward passes."

—College Life.

For a good place to eat

ALEXANDER DINING ROOM

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Should be your choice

THE PIE BOX

SERVING A SPECIAL 40c LUNCH AND A 40c, 50c AND 60c DINNER
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Green St. at Lake Ave.

Phone TErrace 7515

Statistics show that
 Yale graduates have
 1.3 children,
 While Vassar graduates
 Have 1.7 children,
 Which proves that women
 Have more children
 Than men.

—Diamond.

Then there's the one about the midget
 chemistry student who slipped and sat down in
 the solution with which he was experimenting.
 He got a little behind in his work.

—College Life.

— o —

"That girl shows distinction in her clothes."
 "You mean distinctly, don't you?"

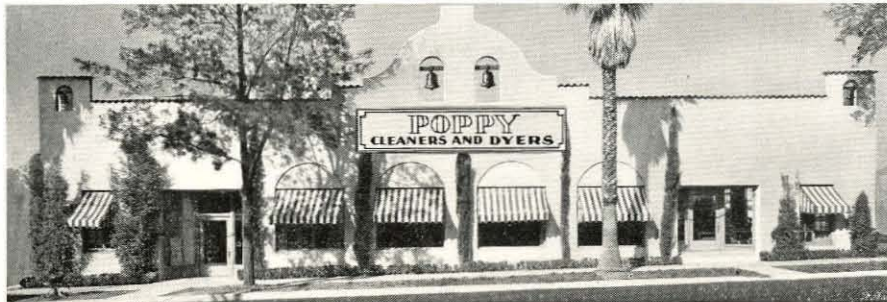
—College Life.

*appreciation to
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 and*

*California Institute of Technology
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 OXford 4269*



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Shoes and Repairing

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PHONE COLORADO 3972
CALIFORNIA

"Can you give me a definition of assault?"
"The wrong man."

—College Life.

— o —

Number 308 (in harem): "Did you know that Solomon is 85 years old tomorrow? What shall we give him?"

Number 232: "A night off."

—Yellow Jacket.

— o —

Sweet Young Thing: "Stop! My lips are for another!"

Fresh Young Man: "Well, hold still then and you'll get another."

—Pennsylvania Punch Bowl.

Mother: "Mary, come upstairs immediately."

Mary: "But I'm all wrapt up in my problem."

Mother: "Tell him to go home."

—Exchange.

— o —

The bride was very much concerned at seeing twin beds in their bridal suite.

"What's the matter, dearest?" asked the attentive bridegroom.

"Why, I certainly thought that we were going to get a room all to ourselves."

—The Marathon Runner.

— o —

College Racket: Selling students four-dollar books written by the department heads.

—Widow.

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THE FASCINATING STORY OF A BOOK COVER IS A DRAMA OF RESEARCH IN SCIENCE, ART AND COMMERCE . . . RESULTING IN A PRODUCT DEDICATED TO THE ADVANCEMENT OF CULTURE . . . EACH OF THESE, PLUS THE SKILL OF THE TRUE ARTISAN WHOSE WORK IS HIS PRIDE, COMPOSE A BILT-RITE BOOK COVER.

Coast Envelope & Leather Products Co.

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SAN FRANCISCO

SAN DIEGO



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preciated and we look forward
to many more years of co-
operating with its editors
and managers.



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HOUSE FOOTBALL SCHEDULE FOR 1935

Ricketts House vs. Maxwell House
at Coffeyville, Kan.
Blacker House vs. Full House
at Poker Flats, Ark.
Fleming House vs. Bath House
at Santa Monica, Calif.
Balch House vs. Out House
at Chick-Salesburg, U. S. A.

"Hello, Bill! How are you getting along at the store?"

"I got fired."

"Fired! What for?"

"I took a label from a lady's shirtwaist and put it on a bathtub."

"But why did you get fired for that?"

"Well, you see, the label read: 'How would you like to see your best girl in this for \$4.50?'"

—The Parade.

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Where you'll meet Cal Tech men.

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Now that Cal Tech has its marine research laboratory on the Corona del Mar shore, on the east side of the entrance to Newport Bay, you'll feel more at home here than ever before.

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and assure the staff of our utmost
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history of the

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I N D E X

INDEX TO ADVERTISERS

Alexander Dining Room	283	Mission Laundry	270
Allen, T. V.	269	Mitchell and Herb	288
Allen, Wiley B.	287	Model Grocery	264
Anderson Typewriter Co.	277	Mother Goose Pantry	273
Arnold, W.	279	Nash, F. C.	277
Austin Studio	261	Newport Chamber of Commerce	287
Bell and Cooley	264	Nordwall Flowers	268
Beverly Tree Co.	284	Novis, F. G.	285
Binley's Optical and Jewelry Store	276	Orban Lumber Co.	258
Boardman's Drug Store	269	Orchid, The	262
Bowling and Billiards, Inc.	273	Parker Typewriter Co.	283
Braddock Pharmacy	262	Pasadena Auto Laundry	263
Braun & Co., Ltd., C. F.	280	Pasadena Blue Print	264
Brenner and Wood	263	Pasadena Stationery and Printing	270
Bryan-Brandenburg Co.	282	Pasadena Typewriter Co.	269
Canteen Lunch	278	Pie Box	275
Coast Envelope and Leather Products Co.	285	Poppy Cleaners	285
Cole, Allen B.	277	Radio Supply	278
Crowell, Wm. C.	259	Reed and Miller	281
Crown City Dairy Co.	269	Reed & Co., F. W.	272
Dedrick's Tux Shop	273	Repcal Brass Co.	258
Dodge, Inc.	283	Reynolds and Eberle	276
Dryden, Dr. F. M.	281	Royal Laundry	265
Ducey, Ted, Excavating Co.	258	Sanitary Laundry	272
Dyas Co., B. H.	260	Seibrecht's	275
Economy Meat Market	267	Shaw, Z. V.	272
Flag Studio	279	Silverwood's	263
Florsheim Shoe Co.	274	South Pasadena Foothill Review	278
Fortner and Loud	271	Stanyer and Edmonson	283
Fosselman Creamery Co.	270	Stationers Corp.	276
Fuller, W. P. & Co.	281	Taylor and Kappler	266
Goodfellow's Grill	279	Turner, Bertha	263
Hammond Lumber Co.	258	Turner and Stevens	267
Heiman, Arthur	255	Wallman, C. L., and Son	268
Hotel Maryland	266	Webb and Seward	281
Hotel Vista del Arroyo	271	Western Lithograph Co.	286
Kaufmann, Gordon B.	257	Whitford Flower Shop	268
Leddy's	271	Wilson Co., William	265
Los Angeles Desk Co.	268	Wil Wite	253
Melvin, E. P.	274	Winegart Drug Co.	284
Meyers, J. A.	262	Yoch, Florence	258



APPRECIATION

When I accepted the position of Business Manager of the "Big T" of 1931, I hoped to be able to raise the necessary money to make the book a financial success. Due to the fact that it was necessary to take over the job in the middle of the work and because of the general business depression, we have had difficulty in meeting the budget. I can truthfully say that I have done the best that I could do under the circumstances.

Larry Ferguson has not only carried out the duties of editor with the utmost skill and insight, but has been a most willing and helpful partner on the business side of the publication. I wish to express my sincere appreciation for his cooperation and advice throughout this work. I also wish to say that it has been both a pleasure and an inspiration to work with such a man as Larry.

Ray Labory has filled the office of Advertising Manager most efficiently as well as lending his support on the circulation end. I wish to thank him for his generous support, especially in his willingness to work hard in securing new advertisers at a time when selling was very difficult.

Charles Stipp is responsible for the distribution and sale of the books, having acted as Circulation Manager as well as helping on the advertising end. The fact that the book has been a success in this respect is due to his efforts and much credit is due him for this work.

De Gould of the Western Lithograph has been most helpful in his cooperation, and I wish to thank him and express my appreciation for his service and advice during the development of this year book.

To the other members of the business staff who were always ready and willing to give their support and without whose help this book would not have been possible, I give my sincere thanks for their support.

CLARK GOODMAN,
Business Manager

APPRECIATION

Only after actual work on an annual does one realize the continued, extended, and diversified effort required before the completed book is ready for distribution, and it is only after one does realize the labor that has perforce been expended that a true appreciation of a college year book can be secured. Because the work is so diversified, not only must each individual perform his own duties, but there must also be the closest cooperation, the most cordial relations, between the staff and the commercial firms, and among the members of the staff itself; and only when this harmony is secured is a successful publication assured. Unusual good fortune in all these requisites this year has made possible this "Big T" of 1931, and the acknowledgment and expression of gratitude to those responsible for this splendid good feeling is a very great pleasure.

To all of those men who in any way have assisted in the work—my most cordial and sincere thanks—your invaluable work is noted and appreciated. There are those, however, whose more extensive work requires greater recognition, for it is upon these men—George Langsner, assistant editor; Harold Roach, managing editor; George Rice, sports editor; and Albert Atwood, photo editor; that the brunt of the work has fallen and to them I acknowledge my indebtedness and offer my thanks for their most valuable service. Kenneth Warren has performed the duties of secretary, and it was due to his willingness to work any and all hours typing copy that made it possible to meet deadlines and smoothed the steady progress of this annual.

The business management is a side of the work of which few are cognizant of the efforts expended, and without the successful termination of which this publication would cease to exist. Following the resignation of Phil Schoeller, Clark Goodman assumed the duties of business manager in December, a time when contacts with advertisers were practically impossible. Clark was thereby forced to delay his advertising campaign until the first of this year, and has been most successful in that limited time. The student body owes Clark an enormous debt for the manner in which he has assumed the responsibilities and performed the duties of his office. It has been the greatest pleasure to work with Clark, for he is a cheerful, willing and most able worker.

The art work and design of the annual is the result of A. J. Vazquez's creative and distinctive ability. Giving freely of his time and ability to an extent far more than could be asked for, at a period when conditions were far from pleasant, it is no exaggeration to say that it is due entirely to his cheerful willingness and unusual talent that the beautiful art work which graces these pages was made possible. Words fail to express the extent of our gratitude—we can only again acknowledge our indebtedness.

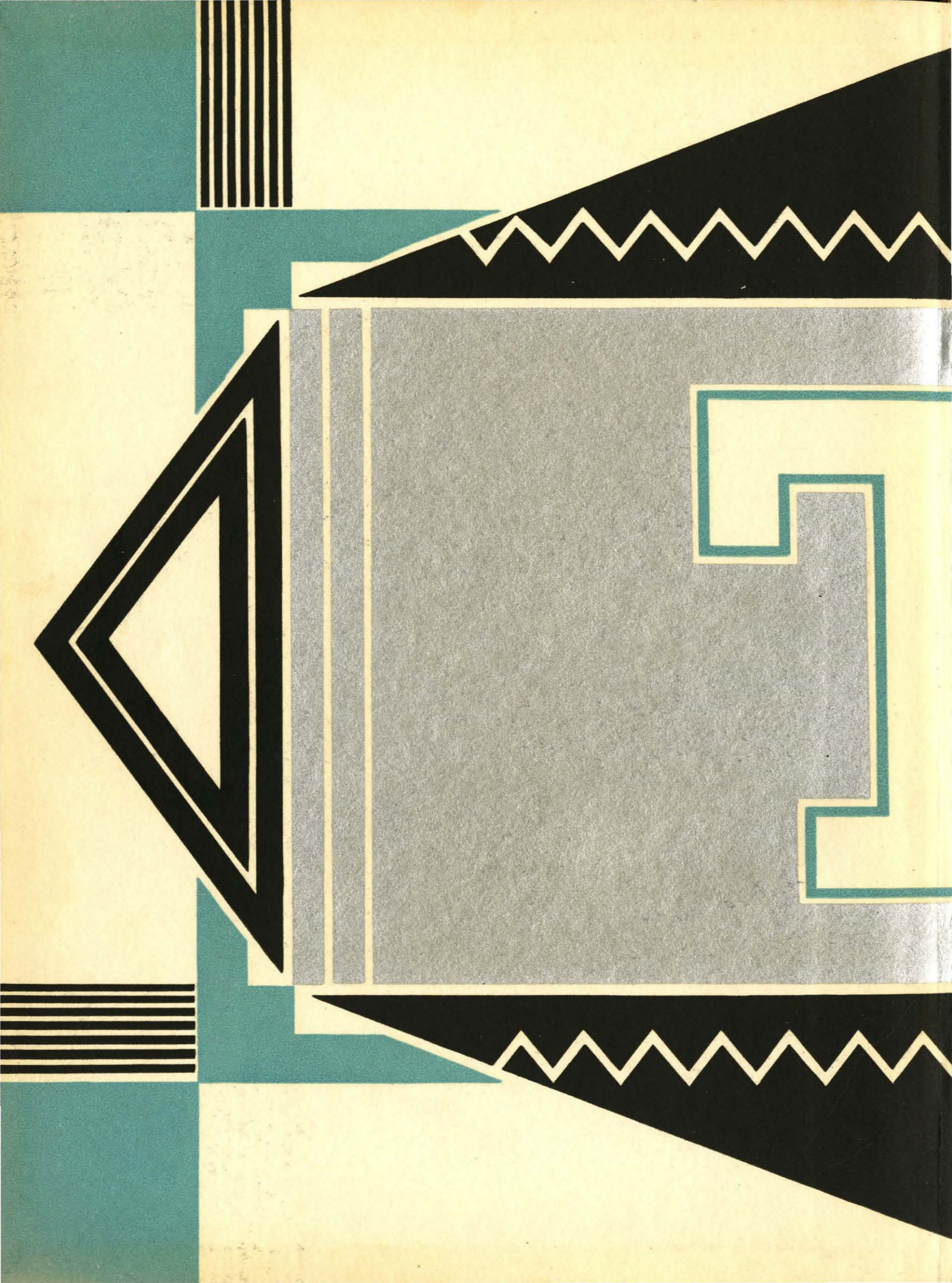
The portraits in the lithograph section were made by Carl A. Gist at his Pasadena studio, and we are grateful indeed to Mr. Gist for the privilege of reproducing these drawings.

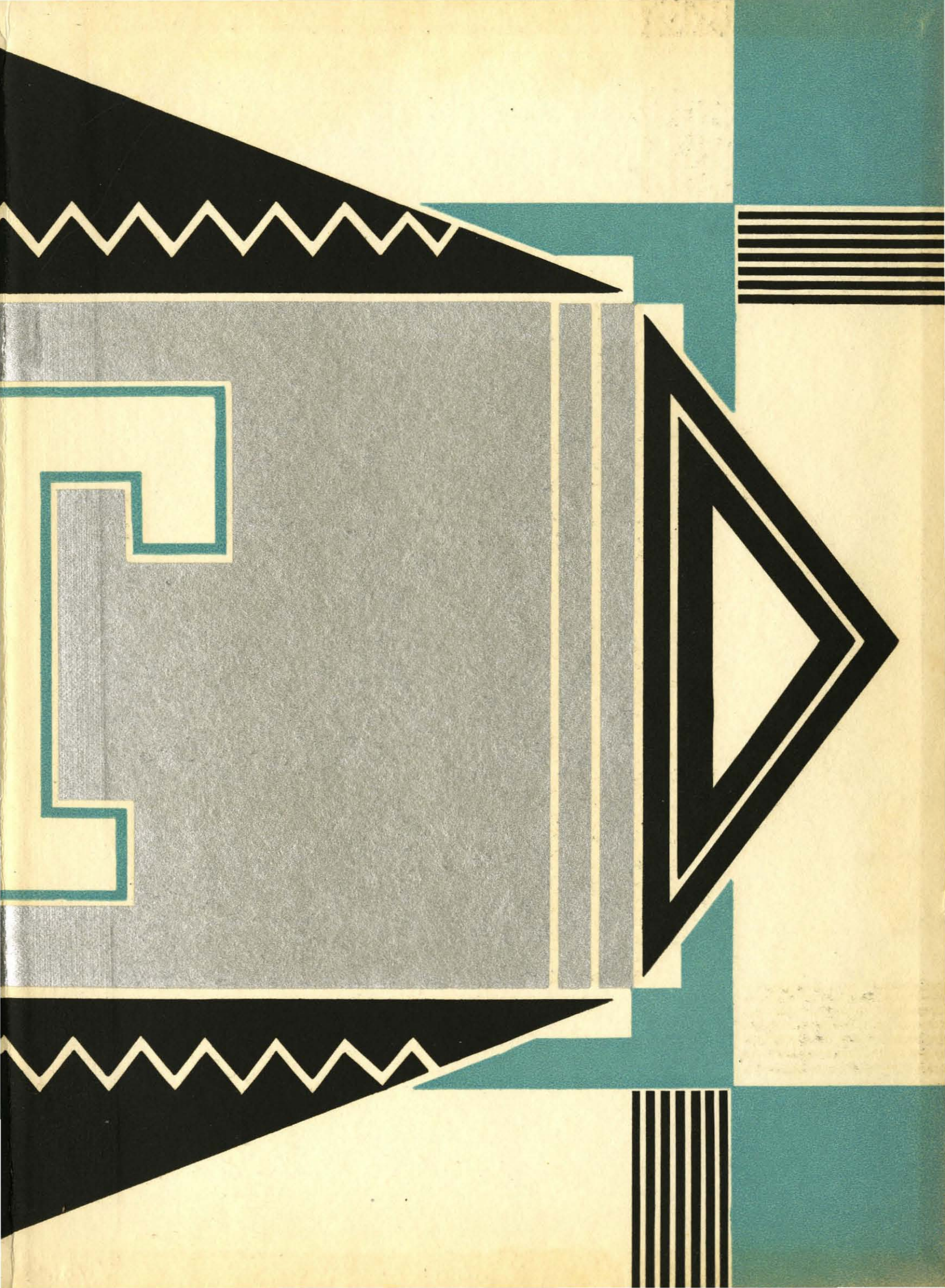
To De Gould, whose splendid and enthusiastic cooperation has been "a ray of light in a slough of despond," Cap Hosinski, George Ebert, and the entire personnel of the Western Lithograph Company—we thank you for your most generous and excellent services.

For three years B. H. Hooper has serviced the engraving for the "Big T," and that fact speaks for itself. His service this year has been invaluable, and we can only repeat, we do appreciate and thank you, Ben.

Just a final word—those who have rendered services on this annual, those who have given of their time and talents, know what their assistance has meant to the editor, and to you—my most sincere and heartfelt thanks.

L. L. FERGUSON.
And Staff of
"The Big T of 1931"





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