

THE BIG 1930



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FOREWORD

When the university graduate finds himself with diploma in hand and the whole World before him, he often looks with awe upon the great problem of how to repay the debt which he owes society for the intellectual endowment it has placed at his feet. Our graduating class this year seems fairly to burn with enthusiasm for accomplishments in life, but older heads often look askance, and wonder whether trials and tribulations will not soon quench the fire burning in the hearts of each and every one of these young men. We, however, look with pride at the progress Man has made since he first appeared upon the Earth, and feel that we too may do our bit in furthering the advance which *Homo sapiens* has just begun to make. Realizing that the moral and intellectual development at which man has arrived since he first appeared on the Earth is only another phase in the long period of evolutionary specialization, the World cannot help but rest assured that men such as are given the opportunities our Institution presents will continue to make as great a development as we ourselves have made over primitive man.

It is hoped that this book will reproduce within its covers the manifold interests which we have found in our life on the campus, and that in later life it will be a constant reminder of the atmosphere which will lead us to the fullest realizations of happiness.

F. S. S.

DEDICATION

To those who have made possible the dream of an institution founded on research, dedicated to the interests of man, and based on the belief in the ultimate truths in science, must go the appreciation which is their just recompense. Challenged by the mere conception of such an undertaking, some have found it within their power to furnish financial aid, others to provide technical knowledge, others to offer architectural suggestions, still others to formulate educational plans, some to offer theoretical advice, others to provide executive comprehension, and some to present timely influence and interest. To all who have co-operated to fulfill this dream whose ultimate realization will be reached not only in completion of the building program, but likewise in continued contributions to knowledge; to these, this book is respectfully dedicated. Such men have not only built an institution of science, but they are the builders of men who will be able to further the accomplishments of the human race.

Those farsighted men see in this institution not merely a group of buildings well provided to carry on scientific study, but rather a concerted effort to make this World a more fortuitous place in which to live, and a more agreeable place in which to carry on further social development.

F. S. S.



In Memorial

to those who have passed on, but before passing have striven to further the development which is constantly going on upon this ever-changing sphere . . .

> Max Andorf Walter Cruzan Charles Springsholtz Victor Todorovitch Paul Wagner

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ADMINISTRATION CLASSES ATHLETICS ACTIVITIES ORGANIZATIONS HUMOR



PITHECANTHROPUS ERECTUS

Each year is marked by some addition to our knowledge of man's dim and distant past. A convenient basis for human history is given by stages of culture. Thus, the first rough indications are the cryptic records of Eolithic time. The famous Pithecanthropus or Java ape-man is the first creature of definitely human affinities. He lived before the coming of the Great Ice Age and was forced to struggle with the mighty carnivors of the time. Skeletal remains indicate, as is shown in the illustration, a prominent ridge above the eye, a low cranium, presumably with a corresponding low mentality. He was erect in posture and stood about five feet, eight inches in height, weighing about one hundred forty-five pounds. His unprepossessing appearance was not, however, the reason for his probable lack of social inclination.



BOOK I ADMINISTRATION



FACULTY ADMINISTRATION



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Of all the pictures exhibited at Cal Tech, the latest, a group picture of Dr. A. A. Noyes, Dr. George E. Hale, and Dr. R. A. Millikan, all in cap and gown, excites the most interest and enthusiasm. This painting, the work of Mr. Seymour Thomas, well-known portrait artist, has just recently been completed. The picture was begun over a year ago, and has taken such a long while to finish, because of the fact that Dr. Millikan had to sit for the painting at odd times, when he was not called out of town and when he was not busy with Institute affairs. Mr. Thomas' studio is located in La Crescenta, California, where this wonderful piece of work was completed.

Several other portraits of Cal Tech personages have been done by Mr. Thomas and are to be found in the different buildings of the school. The individual pictures of Mr. and Mrs. Norman Bridge are in the Norman Bridge library. A portrait of Mr. C. W. Gates, founder of the Gates Chemical Laboratory, is in the east wing of the Chemistry Building near the library. A portrait of Mr. A. H. Fleming is hung in the exhibit room of Dabney Hall along with the portrait of Millikan, Noyes and Hale.

One of the main features of the group painting of the three men who have been instrumental in the upbuilding and expansion of the Institute, is the fact that Mr. Thomas has portrayed Dr. Millikan in a hall giving a lecture. Both Dr. Hale and Dr. Noyes are watching the effect of Dr. Millikan's words upon the audience, which is presumably scientific. With this in mind the observer will be doubly interested in this fascinating painting.





Hinrichs Van Buskirk Macarthur Barrett

ADMINISTRATIVE OFFICERS OF THE INSTITUTE EXECUTIVE COUNCIL

ROBERT A. MILLIKAN, Chairman

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FRANKLIN THOMAS	-	+	-		-	-	-	-	Civil and Mechanical Engineering	
JOHN P. BUWALDA -	- 1	-	-		-	-	-		Geology and Paleontology	
THOMAS H. MORGAN	-	-	-	-			-	-	Biology	
CLINTON K. JUDY -	-	-	-	-	-	-	-	-	Humanities	
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OTHER OFFICERS

FREDERIC W. HINRICHS,	JR.		-	+	-	-	-	Dean of Upper Classmen
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EDWARD C. BARRETT -	-	-	-	-	-	-	-	Secretary
HARRY C. VAN BUSKIRK	-	-	-	-	-	-	-	Registrar



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PHYSICS

During recent years the Norman Bridge Laboratory of Physics has gained a world-wide reputation by reason of the remarkable opportunities for study and research which it presents, and it is largely through the research of its personnel that the general public knows the Institute.

Research in molecular physics, spectroscopy, quantum mechanics, and other fields of physics, are richly fulfilling the expectations on which the Bridge Laboratory was established. This research will always be the primary justification for its existence, and from it it derives its importance. It is to be hoped, therefore, that we may be able to observe a constant improvement upon the already high standard of accomplishment which has been set, and the occurrence of this seems very probable when one observes the growth of the Graduate School. Only a little more than a year ago was announced a gift of the International Education Board to provide for the construction by the Institute of an Astrophysical Laboratory and a two-hundred-inch reflecting telescope.



Millikan





CHEMISTRY

With the formulating of plans for an addition to Gates Chemical Laboratory and the constant working in numerous research projects, the entire staff of the Institute Chemistry Department has been thoroughly occupied through the past year. The greater part of the work for the new wing has fallen upon Dr. Arthur A. Noyes, director of the Gates Chemical Laboratory, who has found time to manage this project as well as the revision of his book on "Chemical Principles." Preparations are being made to manage the beginning of instruction in the completed wing by September, 1931. This addition, which will be placed to the west of the present building, is expected to be used entirely for the instruction of Freshmen. This year, too, finds many research problems being solved at the Institute by the faculty members of the Chemistry Department. The most important of these projects are "X-Rays of Crystal Structure" by Professor Pauling, "Raman Effects" by Professor Dickinson, "Decomposition of Nitrous Pentoxide" by Professor Tolman, and "Activity of Strong Electrolytes in Mixtures" by Dr. Bates.



Noyes

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BIOLOGY

It is with a desire to lay emphasis on the fundamental principles underlying the life processes of animals and plants, that the Department of Biology was established. In all the work the emphasis will be on the intimate relation of biology to the physical science. At present, research is being carried on along the lines of plant and animal genetics, experimental embryology and proloyoology. The staff, headed by Dr. Thomas Hunt Morgan, formerly of Columbia University, who is one of the world's most eminent authorities on Genetics, is rapidly enlarging and now includes prominent research men from throughout the world. The purchase of a new marine station on the ocean beach, as well as a plant farm east of Pasadena, has enabled the department to extend its operations on a large scale.



Morgan

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AERONAUTICS

Through the final dispersement of the Daniel Guggenheim Fund for the Promotion of Aeronautics there was established the largest research college for lighter-than-air craft in the United States, with its head at the Institute. One of the most unusual opportunities offered by the graduate school is the wind tunnel, which has a working section ten feet in diameter and an air speed of over 200 miles per hour; the design and operation of the tunnel is not only interesting, but also a most important application of theoretical aerodynamics. The success of the tunnel's design is demonstrated by the fact that the graduate school has, from an unannounced source, been asked to make the complete design work for a tunnel which is very similar to the present one at the Institute.



Bateman



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CIVIL ENGINEERING

The study of civil engineering, perhaps the oldest of the engineering professions, is amply provided for at the Institute which gives, besides the usual undergraduate work, an especially efficient graduate course. Under the leadership of Professor Thomas, and with the assistance of Professors Martel, Michael, and Converse, this department has gained a reputation for itself, which is strengthened by the remarkable records of many of its graduates. The Civil Engineering course is unique in that generalized theory and fundamentals are stressed throughout the first years, with specialization in such branches as highway construction, irrigation, and sanitation reserved for graduate study. Of special interest is the research work now being conducted to determine the effects of earthquakes on buildings and other structures.



Thomas

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ELECTRICAL ENGINEERING

Initially under the direction of Professor Gilmore of Throop Institute, the Electrical Engineering Department of Cal Tech was organized as a separate and complete division under the able direction of R. W. Sorensen when the Institute was removed to its present site in 1910. Desiring to enlarge the department to care for graduate instruction and to deviate from the cut and dried electrical engineering facts presented, the Institute, with the generous assistance of the Southern California Edison Company, completed in 1924 the now famous million volt laboratory, which is twice annually the scene of public high voltage demonstrations in which this year a special demonstration was held in conjunction with the National celebration of the fiftieth anniversary of Edison's discovery of the incandescent lamp.



Sorensen



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GEOLOGY

Without some acquaintance with the fundamental principles of evolution—without some elementary knowledge of Geological formations, the equipment of an educated man and especially that of an engineer is not complete. This need caused the formation of the Department of Geology and Paleon-tology at the Institute, a department which has now come to be one of the most interesting and well developed on the campus. The work of the division covers all the fields of Geology. Research is being conducted by the staff and graduate school over areas scattered from Oregon to Mexico. Perhaps the greatest undertaking of this year is the construction of a building for the work in Geology and Paleontology, providing adequate room for a museum, library, offices and fine graduate student quarters.



Buwalda

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MECHANICAL ENGINEERING

Largely due to the wonderful spirit of the men in the mechanical engineering department, this department has made a tremendous stride in growth in the past few years. Time and time again, new courses have been offered and new machinery has been constantly added to the laboratories until now we have a fine, well-balanced laboratory and a thoroughly comprehensive course. Many branches of mechanical engineering are thoroughly taught, including the new course in aeronautics, refrigeration, hydraulics, thermodynamics and its applications to production and utility of power, machine design, and heat engineering. Professor Robert L. Daugherty, chairman of the Board of Directors of the City of Pasadena, heads the department. He is assisted by Professor W. Howard Clapp, who is chairman of the program committee of the American Society of Mechanical Engineers.



Daugherty





ENGLISH

The California Institute of Technology has for a long time realized that one of the most useful tools an engineer or a scientist can have at his disposal is a thorough training in English. For, if he has no medium through which he can give to the world the wealth of his ideas and the results of his work, he is certain to remain forever obscure and of vastly less service to his fellow men than he would be if he were able freely and easily to communicate with them.

The English Department, with its carefully selected staff of instructors, offers opportunities of which there are few parallels in technical institutions. The classes are small, allowing close personal contact between student and instructor, and no effort is spared on the part of the staff to make the study of the Humanities a pleasant and valuable one.



Judy

[24]



MATHEMATICS

The Mathematics Department holds its place among the important departments of the Institute, having improved steadily for the last ten years until now we can boast of a group of outstanding men composing one of the foremost mathematics departments in the country. Because of the work of Dr. E. T. Bell, head of the group, and his associates, excellent opportunity is now afforded for men desiring research in mathematics, thus filling the demand of the physics, chemistry, engineering, and areonautics departments for a more comprehensive survey of higher mathematics.

Among the outstanding achievements of the year was the bringing to the Institute of the 274th meeting of the American Mathematical Society, due largely to the efforts of Dr. E. T. Bell who is on the executive board of the society.



Bell





HISTORY AND ECONOMICS

The departments of History and Economics at the California Institute have already gained an outstanding place among such departments of the scientific schools in the United States. The Institute is distinctive in that it places strong emphasis on the value of the humanistic studies to the development of the scientist or engineer. Besides stressing English and foreign languages, great importance is placed upon European and American History, economics, and government. It is the good fortune of Tech to be located close to the Huntington Library, which makes it possible for the Institute to utilize, in its humanities department, many of the outstanding scholars who come to the library in connection with their literary and historical research. Among these were Dr. Max Farrand, Director of Research at the Library, Professor Frederick J. Turner of Harvard, Professor Bernard Fay of Paris, Professor Tucker Brooke of Yale.



Munro

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STUDENT ADMINISTRATION



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Sidney Zipser

THE EXECUTIVE COMMITTEE

The Executive Committee, as the name implies, is the group which takes care of the administration of student affairs. It is the organization elected from the three upper classes and led by the Student Body President, which guides and judges all of the student body's actions and is responsible for the effect of these actions upon the faculty administration and the outside world. Its organizing power is to make individual student initiative more effective and its judiciary power is to safeguard against individual violence. This efficient though quiet body has the Student Body President as its one mouthpiece.

The Executive Committee is the intervening organization between the faculty and the student body. At the regular monthly meetings of the committee on student and faculty relations, student complaints regarding instructors, assignments and outside activities

are presented to faculty representatives. This year's Ex Committee has set the precedent of having regular daily interview hours for the students' convenience. Not only did some of the distinguished members of the faculty express their views on outside activities, recreation and social affairs, but also members of the student body were allowed to give their opinions. The Executive Committee also had regular office hours during which students could come and discuss campus problems and conditions.

During the last year two student-faculty assemblies were organized by this group. Here the value of extra-curricular activities was discussed by the several factions and many unexpected and illuminating viewpoints were heard by the student body.

It is the job of this committee not only to restrain but also to reward student members. Honor awards are given by the student body at the judgment of the Executive Committee after the established precedents and in recognition of new work.



Sturgess Crawford Alderman Smits Hatch Boyle Newby



THE BOARD OF CONTROL

Tech is noted for its Honor System. We take pride in its success as we do in nothing else. From the day of our entrance to the day of our graduation we are constantly reminded that the Honor System is our code of honor and our most cherished tradition. We can leave our possessions anywhere on the campus and rest assured that they will be there when we return. The faculty is perfectly confident of our conduct during examinations, and the fact that we have retained its confidence indicates that the Honor System is a success.

Always in the past it has functioned without difficulty, and we have been justly proud of an institution that has known almost constant failure in other schools. Tech is larger now than ever before, but the Honor Spirit is as strong, if not stronger, than in the past. When the system functions smoothly, as it did this year, we at Tech know that the reason is the tireless efforts of the Board of Control,



Jack Sturgess

whose duty it is to enforce the Honor System and instill the Honor Spirit in every student.

The Board is composed of twelve members, as follows: four seniors, three juniors, two sophomores, and one freshman. The vice-president of the student body is acting chairman, without vote. The president of the student body is a member of the Board, ex-officio, and is one of the members from his class. The secretary of the student body serves as secretary of the Board and is also without vote. The other members are elected by their respective classes. The Board of Control investigates all violations of the Honor System; it has no power to dismiss or suspend an individual from the Institute, but it may make recommendations to the faculty to that effect, which are invariably accepted and enforced.

Not only is membership on the Board of Control a most signal honor, but also it is a position which calls for initiative, perseverance, and above all an even-tempered, level-headed disposition. We may be justly proud of the admirable manner in which the Board of Control handled its problems this year.



Towler Newby Chambers Boyle Rice Goodman Strong Lehman Monning



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Lehman

er Monning

COURT OF TRADITIONS

The Court of Traditions is a subordinate committee to the Board of Control, and, as its name implies, has to do with the enforcement of college traditions, particularly to do with the Freshmen. It was organized in 1922 with the end of doing away with hazing, which is of no credit to any campus, as well as of enforcing the traditions. The Court is made up of four members in all. The following men were in office when the Court was being held: Bill Towler, Senior Judge, who presided over the Court; Bob Lehman, Junior Judge; Jack Chambers, Sophomore Prosecutor; and John Monning, Freshman Representative. All of these were chosen from the Board of Control except the Sophomore Representative, who was appointed by the President of the Sophomore Class. Thus, with four classes represented, the atmosphere of the Court is kept above the squabbles of the Sophomores and Freshmen, and yet the Frosh are properly disciplined.

The general order of business for the Court is as follows. The Sophomore Prosecutor informs the court of the nature of the case. The defendant is then allowed to speak in his own defense. If, after this hearing, the defendant is found guilty, he receives his sentence, the severity of which depends upon the seriousness of the offense.

Although the Court of Traditions was created for the sole purpose of enforcing Freshman rules, and college traditions, it is not to be taken lightly, and contempt of court is a serious offense, which, if repeated, may be passed to the Board of Control.

In the years past the rules governing the action of the Frosh were enforced immediately after registration in the fall until late in the third term, but, in the last three years this custom has been changed, necessitated by the fact that the Frosh were emancipated during the first term. This year the emancipation occurred after the Pomona game, thus ending the life of the Court.

During the time of operation, the Court meted out many sentences to those who broke the traditions. In a large number of cases, the sentences called for work to be done around the campus, but still many of them were in the form of humiliating tasks. This year the things done as a result of the sentences imposed included sticking stickers on automobiles, shining shoes, helping with the distribution of the Tech, and many other things.



Bates Widess

Cromley Nagashi Hatch Pratt

NATIONAL STUDENT FEDERATION OF AMERICA

The National Student Federation of America grew out of the Intercollegiate World Court Congress which met at Princeton University, New Jersey, in December 1925. At that time the National Student Federation which had been started by a group of students of the University of California, Berkeley, California, on January first of that year, was incorporated into the new organization, which took over its name. The Federation expressed its ideals and objectives in this preamble of its constitution:

"We would achieve a spirit of cooperation among the students of the United States of America to give consideration to questions affecting students' interests; we would develop an intelligent student opinion on questions of national and international importance; we would foster understanding among the students of the world in the furtherance of an enduring peace."

In the pursuance of these objectives the National Student Federation of America is organized as a permanent working body with an executive committee (formed of three officers, six regional representatives, and two delegates-at-large), seven standing committees, and several special committees. Through this organization the N.S.F.A. functions throughout the year between its national congresses, considering questions of national and international importance in the student world. Results of this work are contained in reports presented to student delegates at each annual congress, where assemble presidents of student councils, editors of college newspapers, and other leading students, who represent the member colleges of the Federation.

The committee is composed of Howard Nagashi, Chairman; Raymond Cromley, Publicity; William Hatch, Lee Pratt, Barker Bates, Moses Widess, Jack Graffman.





NEANDERTHAL MAN

Neanderthal man from the caves of Le Moustier, Spy and other localities in western Europe lived in the lower Paleolithic or Old Stone Age when flaked flints were the common implements of the day. Some forms of man appear in the sequence between Pithecanthropus and Neanderthal man. A notable female skull and jaw from Piltdown in England shows considerable cranial development but the jaw is primitive with heavy canine teeth and no chin so that Professor Matthew observes that the Piltdown woman had not acquired the conversational propensities for which her successors are so justly celebrated. We know that Neanderthal men were short, averaging five feet in height, stocky, and slouching in appearance. In advance of the above mentioned forms the jaw is lighter and possesses a trace of a chin. This species was not progressive enough to survive the Fourth Glacial Stage and bears an unclenephew relationship to the living human race.





SENIORS







Downs Shields President Vice-President

SENIOR CLASS

The Senior Class officers are: President, Roscoe Downs; Vice-President, John Shields; Secretary, Robert Bungay; Treasurer, John Gaylord; Athletic Manager, Walter Ayers; Board of Control, Sidney Zipser, Jack Sturgess, Austin Strong, William Towler, and Lester Boyle.

The previous class officers are: freshman year, Robert Oaks, William Towler, Franklin Crawford, William Hacker, and Horace Allen; sophomore year, William

Towler, Franklin Crawford, Sidney Zipser, William Morton, Austin Strong and Robert Oaks; junior year, Sidney Zipser, Roland Hodder, Robert Bungay, Frederick Scott, Lester Boyle, William Towler, Franklin Crawford, and Roscoe Downs.

It is true that the Senior Class may well be proud of its achievements in every sport; in all branches of student activity and in scholastic attainment as well the Class of 1930 is among the foremost of the leaders. Still it is not for these accomplishments that the class deserves distinction. Other classes have had gridiron heroes; other classes have had brilliant orators and famed scholars. It is in another way that the Class of 1930 is outstanding.

During its four years at C.I.T. the present graduating class has been subject to much experimentation. Perhaps it is for this reason that this class has been mentally so self-reliant and free from the prejudices of convention, but more probably this result is merely an accentuation of an innate power of discrimination.

When the class came here as freshmen, its members demanded and obtained a higher type of instruction in certain subjects. Their influence aided in obtaining more satisfactory programs for assemblies.

Although the class had its share in worth while activities, it over-emphasized none of them.





Announcement Committee Levine Ellis

Dance Committee Bungay Shields

Gaylord

The Big



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It supported athletics but never was intoxicated by wild-eyed yell leaders. That the class reverenced worthy traditions but ignored and abolished those that were petty or undesirable is ably attested, for while its members took part in an unsanctioned "T" party, it ignored petty violations of the Senior Oak by underclassmen and was foremost in limiting hazing to the minimum requirements of discipline.

Student Body President Sidney Zipser, by continuing the policy of his Junior Class presidency, was typical of the thoughtful and impartial attitude of his class. With



Bungay Secretary Gaylord Treasurer

Sid Zipser as presiding officer the minority side of a dispute was assured respectful consideration. He always sought to ascertain the will of the student body before lending his support to any program. The "rah, rah" Rotarian spirit of the past was displaced by a new attitude in which all problems were confronted with a seriousness and with a sense of fairness seldom encountered among college students.

Many, indeed, have been these problems. As Juniors the class evolved the first equitable method of taxation for class functions in which not all the class can participate. It would be well for other classes to adopt such a method of apportioning class dues. Many problems of future policy concomitant with the period of expansion and development ahead of us have been met and solved by the members of the present graduating class.

It will be interesting to note the many changes that have taken place during the last four years. When the present seniors met for their first classes in geology, in paleontology, and in biology, they were simply being experimented upon in an attempt to discover the best method of presenting these new courses. The present methods of teaching these subjects are the result of the cooperation of the Class of 1930.



Class Day Committee Wilkinson Downs Baker



Gift Committee Kelley Zahn






FRANK E. ALDERMAN, "Pony" "He sees the point and laughs"

Of Nevada, Iowa; Preparation: Santa Ana High School. Civil Engineering Entered 1926 Sigma Alpha Pi; A.S.C.E.; Varsity Club

Football (1, 2, 3, 4), letter (3, 4); track (1, 2, 3, 4), letter (2); Frosh-Soph dance chairman (2); A.S.B. treasurer (4).

DONALD K. ALLISON, "Yap" "Sex Appeal"

Of Kansas. Preparation: Hollywood High School. *Chemical Engineering* Entered 1925 Chem Club, Vice President (2), President (3); Glee Club (3, 4); Big T (3); California Tech (2, 3, 4).



JOHN EDWARD ANDERSON "Iowa"

Of Fort Dodge, Iowa. Preparation: Paton High School. *Electrical Engineering* Entered 1928 Beta Theta Pi (Iowa State); A.I.E.E.

WILBUR WALTER AYERS, "Walt" "Chief Interest: His Wife"

Of Highgrove, Calif. Preparation: Riverside High School. Aeronautical Engineering Entered 1926 Gnome Club; Varsity Club

Football (1, 2, 4); track (1, 2, 3, 4), letter (3, 4), captain (4); Senior athletic manager; Ditch Day Committee.









HOWARD EUGENE BAKER, "Bake" "Progressive Conservatism"

Of Salem, Oregon. Preparation: Santa Monica High School. Civil Engineering Entered 1925

Gamma Sigma

Football (1); Tech Staff (1, 2); A.S.B. Publicity Manager (3); A.S.B. Secretary (4); Associate Editor Big T (3); Exhibit Day Committee (3); Board of Control (4); Honor Key (3); Chairman, Class Day Committee (5).

IRA C. BECHTOLD "Disgustingly Honest"

Of Pasadena, California. Preparation: Glendale High School. Colton Union High School. San Bernardino Valley Junior College (1).

Chemistry

Entered 1927

Press Club, Amer. Chem. Soc.

Chem Club (2, 3, 4), 2nd Vice President (3), President (4); Tech Staff Reporter (2), News Editor (3), Assistant Editor

(4); Big T Activities Editor (3).





TOM G. BERNHARDI "Gifted and Stubborn"

Of Council Bluffs, Iowa. Preparation: Jefferson High School. Chemical Engineering Entered 1926 Sigma Alpha Pi; Tau Beta Pi; Varsity Club Swimming (1); Basketball: Numeral (1), Varsity (2, 3, 4), Captain (4); Ditch Day Committee.

CLYDE L. BLOHM

"An agile brain and an agile sword"

Of Marietta, Ohio. Preparation: Hollywood High School (3¹/₂ yrs.) Entered 1927. U. C. L. A. (2 yrs.) Chemical Engineering

American Chemical Society Glee Club (1, 2, 3, 4); Fencing Club (3, 4).



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JAMES ROBERT LESTER BOYLE, "Les" "Attends classes by proxy"

Of Lyons, Kansas. Preparation: Santa Ana High School. Mechanical Engineering Entered 1926

Gamma Sigma; Varsity Club; A.S.M.E.

Football: Numeral (1), Varsity (2, 3, 4), Letter (3, 4), Captain (4); Basketball: Numeral (1); Baseball: Numeral (1), Captain (1), Letter (2, 3, 4), Captain (4); Class Athletic Manager (3); Board of Control (4); Varsity Club President (4); Representative-At-Large (4).

BERT V. BRASHER, JR., "B.V." "Casual Indifference"

Of Roscoe, Texas. Preparation: University of Dallas Academy. U. C. L. A. (2 yrs.)

Chemical Engineering

Entered 1927

Chem Club (2, 3); Fencing Club (3, 4).



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ROBERT H. BUNGAY, JR., "Bob" "Hen-pecked, but jovial still"

Of Santa Monica, Calif. Preparation: Glendale High School. Mechanical Engineering Entered 1926

Sigma Alpha Pi; Tau Beta Pi; A.S.M.E.

Band (1, 2, 3); Track (1, 2); Baseball (1, 2, 4); Class Secretary (3, 4); Chairman Frosh-Senior Dance (4); Junior-Senior Prom Committee (4)

ALBERT BUTLER "Pluck and Persistence"

Of Auburn, Calif. Preparation: Santa Barbara High School. Santa Barbara State Teachers College. U. C. L. A. *Electrical Engineering* Entered 1928 Big T Staff (4).





DEANE E. CARBERRY "Practical"

Of Mansfield, Illinois. Preparation: Calexico High School (3 yrs.) Los Angeles High School (1 yr.)

Civil Engineering

Entered 1926

Gamma Sigma; A.S.C.E.

Band (1, 2, 3, 4); Big T, Photographer (3, 4), Business Staff (4); Tech Staff, Assistant Business Manager (4); Treasurer A.S.C.E.; Baseball Manager (1); Scrub Football (3, 4); Track (1, 2, 3, 4)

CHESTER F. CARLSON, "Chet" "Thinks in terms of formulae"

Of Seattle, Washington. Preparation: San Bernardino High School. Riverside Junior College. Entered 1928

Physics





HOWARD CARY

"Mathematical, independent"

Of Los Angeles, Calif. Preparation: Los Angeles High School Civil Engineering Entered 1925

Sigma Xi

Tennis: Numeral (1), Varsity (2, 4), Captain (4); Junior Travel Prize.

JOHN DRURY CLARK, 'Shrimp" "Chem Lab Wizard"

Of Fairbanks, Alaska. Preparation: Fairbanks High School. Alaska Agricultural College.

Chemistry

Entered 1927

Press Club

Chem Club (5); Fencing Club (4, 5), Secretary-Treasurer (5); Rifle Club (5); Tech Staff (5); Big T Staff (5).



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BERTRAM RUSSELL COUPLAND "Usually correct"

Of Colorado. Preparation: U. C. L. A. (2 yrs.) Entered 1927 Electrical Engineering Band (2, 3, 4), Leader (4).

HORACE RICHARD CRANE, "Dick" "Bright and Lazy"

Of Turlock, Calif. Preparation: Turlock Union High School. Entered 1926 Physics Tech Staff (4); Orchestra (1, 2, 3, 4).



FRANKLIN CRAWFORD, "Frank" "A Chatterbox"

Of Oklahoma City, Okla. Preparation: Pasadena High School. Mechanical Engineering Entered 1926

Gnome Club; Tau Beta Pi

Tech Staff (1); Big T Staff (3); Track Manager (2); Base-ball Manager (2, 3, 4); Class Treasurer (1); Class Secretary (2); Board of Control (3, 4); A.S.B. Secretary (4); Glee Club (1, 2, 3, 4), President (3); Honor Key (3, 4); Exchange Programs (1, 2, 3, 4); Class Day Committee (4).

RAYMOND A. CROMLEY, "Ray"

Of Tulare, Calif. Preparation: Long Beach Poly High School. Physics Entered 1926

Pi Kappa Delta; Press Club; Drama Club

Debating (1, 2, 3, 4), Frosh Debate Coach (3, 4), Oratory (3, 4), Representative to Regional Convention of Pi Kappa Delta (3, 4), to National Convention (4); Big T Staff: Circulation Manager (3), Administration Editor (4); Tech Staff: Assist-ant Editor (3), Copy Editor (3), News Editor (3, 4); Throopers (3, 4); Cosmopolitan Club (3, 4); P K D Plays (2, 3, 4), Publicity Manager (3), Gen. Manager (4); Honor Key (3, 4); Aero Club (4); Publicity N. S. F. A.; Track (1, 2, 3, 4); Cross Country (1, 2, 3, 4), Letter (3).





HERBERT H. DEARDOFF, "Minute Man" "A Stern, Silent Man of the Open West"

Of Missouri. Preparation: Pasadena High School.

Civil Engineering Entered 1926

A.S.C.E.; Drama Club Aero Club (2, 3); Rifle Club (4); Rifle Team (3, 4); "The Shewing Up of Blanco Posnet."

LYON SPRAGUE DE CAMP, "Speedy" "Invalid Iconoclast Inveighs"

Of New York City. Preparation: Hollywood High School. *Aeronautics* Entered 1925 A.S.M.E.; Press Club

Tech Staff (1, 2, 3), Editor (4); Big T Staff (4, 5); Press Club: Secretary-Treasurer (3), Vice-President (4), President (5); Fencing Club (4, 5); Aero Club (2), Secretary-Treasurer (4, 5); Cosmo Club (3).





NORMAN FREDERICK DOHERTY, "Red" "Red hair and a smile"

Of Holdrege, Nebraska. Preparation: Holdrege High School. Franklin High School (L.A.). Chemical Engineering Entered 1926

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

ROSCOE PHILLIPS DOWNS, "Ross" "Sadly overworked"

Of Riverside, Calif. Preparation: Hollywood High School. Civil Engineering Entered 1925

Gnome Club; A.S.C.E.

Varsity Track (1, 2, 3, 4); Varsity Cross Country (1, 3, 4), Letter (3); Board of Control (2, 3); Court of Traditions (2); Class President (4); Chairman Interfraternity Council (4); Throopers (3, 4).









HARVEY SELDEN EASTMAN "Good natured, unhurried, he accomplishes much" Of Havana, Cuba. Preparation: Pasadena Junior College. Chemistry Entered 1928 Chem Club (4).

KARL H. EFFMAN, "Engine Effman" "A practical man—an engineer"

Of Akron, Ohio. Preparation: L. A. Polytechnic High School. Mechanical Engineering Entered 1926

A.S.M.E.

Varsity Football (2, 3); Varsity Track (1, 2, 3, 4); Tech Business Staff (3).



ORRIN M. ELLIOTT

"A capable understanding—regardless of pedal extremities" Of Canton, Illinois. Preparation: San Diego High School. Mechanical Engineering Entered 1926 Aero Club (2); Glee Club (3, 4); Swimming (4).

EMORY ELLIS

"Not only a chemical engineer"

Of Illinois. Preparation: San Diego High School. Chemistry Entered 1925

Pharos; Tau Beta Pi; Press Club

Tech Staff (1, 2, 3, 4), Assistant Managing Editor (2, 3); "Y" Cabinet (2, 3); "Y" Handbook Editor (3); Exhibit Day Committee (3); "T" Party (1); Dorm Club (1); Chem Club (1, 2, 3, 4).







EUGENE VANCE ELLIS, "Gene" "Another farmer becomes an engineer"

Of McComb, Oklahoma. Preparation: Okmulgee Oklahoma High School. Oklahoma A. & M. Electrical Engineering Entered 1928 Alpha Sigma Delta (Oklahoma A. & M.); A.I.E.E.

JOE FOLADARE

"Cuteness and innocence, a smile and brains" Of Los Angeles, Calif. Preparation: Manual Arts High School. Physics Entered 1926

Tau Beta Pi; Sigma Xi; Drama Club Orchestra (1, 2, 3, 4), President (4); Drama Club Plays (2, 3, 4); President Drama Club (4).







HENRY EDWARD FRACKER "Physical research and music absorb all interest"

Of San Diego, Calif. Preparation: High School. Electrical Engineering Entered 1925

Tau Beta Pi

CLINTON E. GATES, "Gates" "Earnestness"

Of Pewaukee, Wisconsin. Preparation: Pewaukee High School. *Electrical Engineering* Entered 1926 Orchestra (1, 2, 3); Baseball (4).





JOHN WALLACE GAYLORD, "Johnny" "Highly condensed"

Of Pasadena, Calif. Preparation: Pasadena High School. Entered 1926 **Chemical Engineering**

Press Club

Freshman Scholarship; Tech Staff (1, 3, 4); Big T Staff (1, 2, 3), Sport Editor (4); Manager and Editor of Y Handbook (3, 4); Y Cabinet (3), Treasurer (4); Treasurer Senior Class (4); Illuminated Map Committee (3, 4); Dance Committee (3, 4); Gym Committee (4); Band (1, 2); Chem Club (1, 2, 3, 4).

CLYDE EDGAR GIEBLER "A practical idealist"

Of Los Angeles, Calif. Preparation: Franklin High School. U. C. L. A. (2 yrs.)

Electrical Engineering

Entered 1928

A.I.E.E.

Cosmo Club (3), President (4); Chem Club (3); The Shewing Up of Blanco Posnet.



EDMUND G. GRANT, "Skipper" "Happy and carefree and unconcerned"

Of Long Beach, California. Preparation: Long Beach Polytechnic High School.

Mechanical Engineering

Entered 1925

Gamma Sigma

Intramural Boxing Champion (120 lb.); Scrub Football; Interfrat Council; Treasurer and Chairman Interfrat Dance Committee.

FRED R. GROCH

"He knows what he wants and he gets it"

Of Deadwood, South Dakota. Preparation: El Paso High School (Tex.)

Electrical Engineering

Entered 1922

Tau Beta Pi

Orchestra (3, 4); Glee Club (3); Electric substation operator for L. A. City (3, 4).









JOHN LELAND HALL, "Jack" "Acting ability"

Of Los Angeles, Calif. Preparation: Hollywood High School. Electrical Engineering Entered 1925

Gamma Sigma; Pi Kappa Delta; Drama Club; A.I.E.E.

Big T Staff (4); Tennis: Numeral (1), Manager (1); Debate Team (1, 2, 3, 4); Shewing Up of Blanco Posnet; Oedipus Rex; Drama Club Play (4); Secretary-Treasurer A.I.E.E.; Drama Club Treasurer; Assistant Yell Leader.

JOHN DOUGLAS HAMILTON, "Ham" "A pragmatic philosopher"

Of Denver, Colorado. Preparation: Santa Monica High School. Chemical Engineering Entered 1926

Tau Beta Pi Baseball (1, 4); Tennis (1, 2, 3, 4); Chem Club (1, 2, 3, 4).





WILLIAM BELL HATCH, JR., "Bill" "Usefulness"

Of Ypsilanti, Michigan. Preparation: Ypsilanti High School. *Civil Engineering* Entered 1925

Pharos

Cross Country (1); Baseball Manager (2, 3, 4); Aero Club (1, 2, 3, 4); Tech Staff (2); Big T Staff (3); Menaechmi (3); A.S.B. Athletic Manager (5); Exhibit Day Committee (2, 5); N.S.F.A. Committee (5); Chairman Senior Gift Committee (5).

ROLAND C. HAWES, "Roly"

"A cynical pessimist with a sense of humor"

Of Riverside, Calif. Preparation: Riverside High School. Chemistry Entered 1926

Pi Alpha Tau; Tau Beta Pi; Drama Club

Cross Country Numeral (1); Swimming Team (1, 2); Junior Basketball Manager (3); Orchestra (1, 2, 3); Band (1); Glee Club (2, 3, 4); Shewing Up of Blanco Posnet; Chairman, Committee on Dabney Readings (4); Blacker Scholarship.





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J. FRED HESSE, JR., "Happy" "Pugnacity"

Of Phoenix, Arizona. Preparation: San Diego Army and Navy Academy; Yale School, Los Angeles.

Electrical Engineering Entered 1926 Football: Numeral (1), Varsity (2, 3, 4), Letter (4); Radio Club (3).

EARNEST C. HILLMAN, JR., "Ernie" "Attention to Details"

Of Los Angeles, California. Preparation: Hollywood High School.

Civil Engineering

Entered 1926

Gamma Sigma; Varsity Club; A. S. C. E.; Press Club

Baseball: Numeral (1), Letter (2, 3, 4); Scrub Football (3);
Tech Staff: (1, 2, 3), Business Manager (4); Exhibit Day Committee; Senior Announcement Committee.



THOMAS TAMOTSU HIYAMA "Hard on Tennis Balls"

Of Hiroshima, Japan. Preparation: Hiroshima Koshi Fuzoku High School.

Electrical Engineering Entered 1925 Tennis Team (3); Cosmo Club Treasurer (3).

> ROLAND F. HODDER, "Mother" "Sympathy for Everyone"

Of Salt Lake City, Utah. Preparation: Glendale Union High School

Geology

Entered 1925

Basketball: Varsity (1, 2, 3), Letter (3); Geology Club; Vice-President Junior Class; Junior Dance Chairman, Big T Staff (3).

Sigma Alpha Pi; Varsity Club







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RAYMOND W. HOEPPEL, "Ray" "Positively Positive"

Of Seattle, Washington. Preparation: Monrovia High School. Chemical Engineering Entered 1926

Tau Beta Pi

Cross Country Numeral (1); Track (1); Chem Club (3, 4); Big T Photo Editor (4).

REA EARL HOPPER "Bright and Lazy"

Of Dallas, Oregon. Preparation: Riverside High School. Aeronautics Entered 1926

Gamma Sigma

Aero Club (3, 4).







S. ERIC HOWSE "Tactful and Polite"

Of London, England. Preparation: High School. *Electrical Engineering* Entered 1926 Big T Staff (1); Play Electrician (3, 4); Shewing Up of Blanco Posnet.

ALEX I. IGNATIEFF "Prepossessing Urbanity"

Of Kurgan, Russia. Preparation: Nikolsk High School, Russia; U. C., Berkeley.

Entered 1927

A. I. E. E.

Swimming (2); Basketball (3); Tennis (4); Cosmo Club.



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Electrical Engineering







HENRY OSCAR IMUS, "Hank" "Organic Chem Lab Fiend" Of Los Angeles, California. Preparation: L. A. High School. Physics Entered 1925 Chem Club (1, 2, 3).

PHILIP JANSSEN "Wise-cracks"

Of Los Angeles, Calif. Preparation: Pomona High School. Chemistry Entered 1926 Tau Beta Pi; Sigma Xi

Blacker Scholarship; Junior Travel Prize.



JOSEF J. JOHNSON, "Old Faithful" "Expert on Eclipses and Alpha Rays" Of Decatur, Illinois. Preparation: Long Beach High School.

Physics Entered 1924 Tau Beta Pi

Glee Club: (1, 2, 3, 4), President (4); President Tau Beta Pi (5).

HARLEN R. E. JONES, "Handbook" "Jones"

Of Fresno, California. Preparation: Fresno High School. Mechanical Engineering A. S. M. E.

Swimming (4).





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HUGO OTTO KLEINBACH, "Foggy" "Dependable"

Of Johannesburg, British South Africa. Preparation: Franklin High School (4 yrs.); U. C. L. A. (half yr.) Mechanical Engineering Entered 1926

A. S. M. E.

Track: Numeral (1), Varsity (2, 3, 4), Letter (3, 4); Cross Country: Numeral (1), Varsity (2, 3, 4), Letter (3, 4); Aero Club (3).

EDWARD KOEHM, "Ed" "A Smile a Mile Wide"

Of Los Angeles, California: Preparation: Franklin High School. Entered 1926

Civil Engineering

Football (1); Baseball (1); Varsity Baseball; Tech Collection Department.







TRUMAN HOWARD KUHN, "Kuho" "Where Are We At?"

Of Glendora, Calif. Preparation: Citrus Union High School. Geology Entered 1926

Gamma Sigma; Varsity Club

Football: (1, 2, 3, 4), Numeral (1), Letter (3, 4); Track (2); Tennis (1); Chem Club (1, 2); Geology Club (3, 4); Exhibit Day Committee (4).

MELVIN LAWRENCE LEPPERT, "Bud" "Faded Bright Cracks"

Of Pittsburgh, Pennsylvania. Preparation: Avalon High School, Avalon, Pa.; Carnegie Tech Night School; Long Beach Polytechnic High School.

Electrical Engineering

Entered 1926

Radio Club

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ERNEST LEVINE, "Bubby" "Crooning Quarterback"

Of Pasadena, California. Preparation: Manual Arts High Entered 1926 School.

Civil Engineering

A. S. C. E.; Varsity Club

Dorm Club (1); Chem Club (1); Basketball (1); Football (3, 4), Letter (4); A. S. C. E. President (4); Glee Club (4); Debating (4); Assistant Basketball Manager (4); Exhibit Day Chairman (4); Honor Key (4); Student Assembly Committee (4); Vocational Outline Editor.

R. STANLEY LORD, "Stan" "Not as Mild as He Appears"

Of Samoa, California. Preparation: Pasadena High School. Entered 1926 Civil Engineering

A. S. C. E.

Band (1, 2); Chem Club (1); Rifle Team (2, 3).



JAMES HARRINGTON MacDONALD "Jimmy" "A Most Admirable Villain"

Of Ohio. Preparation: Citrus Union High School. Civil Engineering Entered 1926

Pi Alpha Tau

Football: Numeral (1); Swimming: Numeral (1), Letter (2, 4); Big T Staff (2); Glee Club (2).

WILLIAM BLACKSTOCK MAITLAND "Bill" "Sir Toby"

Of Oak Park, Illinois. Preparation: Glendora Union High School. Geology

Entered 1926

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









HARRY SHATTUCK MASON JR. "He's Always Tired"

Givil Engineering

'Of Los Angeles, California. Preparation: Los Angeles High School.

Football: Numeral (1), Soph Manager (2), Scrubs (3, 4); Track: Numeral (1), Varsity (3, 4); Dance Committee (1, 2, 3); Tech Sports Writer; Chairman Ditch Day Committee.

HARRIS K. MAUZY, "Hash" "He Leapt Amazing Heights"

Of Chicago, Illinois. Preparation: Chaffey Union High School; Santa Monica High School. **Civil Engineering**

Varsity Club; A. S. C. E.

Track: Numeral (1), Varsity (2, 3, 4), Letter (3); Tech Staff.







Entered 1924

Entered 1924

RALPH STEWART McLEAN

"Reliable, Industrious, Sincere, and Good-Natured"

Of Denver, Colorado. Preparation: Fullerton Union High School; Fullerton Junior College.

Civil Engineering

Entered 1928

A. S. C. E.

KENNETH L. MILES, "Kenny" "Extreme Busyness"

Of Oregon. Preparation: Glendale High School. Economics and Civil Engineering

Entered 1926

Gamma Sigma; Pi Kappa Delta; Drama Club; A. S. C. E.

Football (1, 2), Numeral (1); Basketball (1); Baseball (1); Track Manager (2, 3, 4); Debating (1, 2, 3); Dorm Club (1); A. S. C. E. Secretary (4); Aero Club (2, 3, 4) President (4); Tech Staff (2); Plays: Menaechmi, Oedipus Rex (Stage Manager), Andria (Business Manager), Blanco Posnet (Stage Manager), In the Zone.



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HARLAND R. MOSS "Organic Lab Technician"

Of Des Moines, Iowa. Preparation: Hollywood High School. Chemical Engineering Entered 1926

Gamma Sigma

Chem Club (2, 3, 4).

FRANK N. MOYERS "Sincere"

Of San Bernardino, California. Preparation: Riverside High School.

Aeronautics

Entered 1926

Tau Beta Pi; Sigma Xi Blacker Scholar; Junior Travel Prize.

Entered 1925



ELMER MASON MUFF, "Dynamite" "A True Tech Athlete"

Of Los Angeles, California. Preparation: Glendale High School.

Mechanical Engineering

Sigma Alpha Pi; Varsity Club

Executive Committee (4); Football (2, 3, 4), Captain (4); Baseball (2, 3, 4), Captain (3).

JOHN STALKER MURRAY, "Jack" "Diseur de Bons Mots"

Of Pictou, Nova Scotia, Canada. Preparation: Pictou Academy; Pasadena High School.

Physics

Entered 1926

Cosmo Club; Rifle Club





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HENRY GLYSSON MYERS, "Hank" "Well, Well, Oil King!"

Of Hamilton, Montana. Preparation: Washington High School, Portland, Ore.; Oregon State College. Mechanical Engineering Entered 1928

CAMPBELL NELSON, "Nels" "A Slow Drawl and a Fickle Heart"

Of Nashua, New Hampshire.Preparation:Los Angeles Polytechnictechnic High School.Entered 1926Glee Club (2, 3, 4); Chem Club (3, 4).







A. B. NOMANN, "A. B." *"Naive"*

Of Whittier, California. Preparation: High School. Electrical Engineering E

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Entered 1926

A. I. E. E.

LAWRENCE CARLTON NYE "Snipe Hunting and Midnight Cross Country"

Of Oak Park, Illinois. Preparation: Los Angeles High School. Physics Entered 1925

Cross Country (1, 2); Track (1, 2); Baseball (1); Tennis (2, 3, 4); Chem Club (1, 3); Tech Staff (2).



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JACK DEAN PRITCHETT, "Gabby Hartnett" "A Hardheaded Business Man—as Hard as a Baseball"

Of Los Angeles, California. Preparation: Riverside Junior College.

Electrical Engineering

Entered 1928

Gamma Sigma; Tau Beta Pi; A. I. E. E. Cosmo Club (4); Baseball (2, 3, 4).

GEORGE WILBUR READ "Even Tempered, Studious"

Of Los Angeles, California. Preparation: Glendale High School.

Electrical Engineering

Entered 1926

Tau Beta Pi; A. I. E. E. Radio Club (1, 2, 3, 4).



GEORGE LAWRENCE REYNOLDS "Bricklayer" "Military Carriage"

Of Albany, New York. Preparation: Glendale High School. Civil Engineering Entered 1926 Tennis (4); Senior Picture Committee.

WILLIAM RIGGS "Blue Shirt and Untamed Hair"

Of Phoenix, Arizona. Preparation: Long Beach High School. Aeronautics Entered 1926

Pi Alpha Tau

Wrestling (1, 2, 3); Scrub Football (1, 2, 3); Soph Chief Deputy.



GEORGE ARTHUR ROSS "A Big, Black Cigar"

Of Factoryville, Pennsylvania. Preparation: Fillmore Union High School.

Electrical Engineering

Entered 1926

Pharos; A. I. E. E.

Cross Country Numeral (1); Track Numeral (1); Minor Sports Manager (4); Senior Picture Committee.

LLOYD W. RUSSELL, "Russ" "Radio"

Of Benton City, Missouri. Preparation: Pasadena High School.

Electrical Engineering Entered 1926 Radio Club Vice-President; Station Manager (3, 4).





OTTO SASS, "Osmium" "Golf"

Of Montana. Preparation: Jefferson High School. Chemistry Entered 1926

Drama Club

Chem. Club (1, 2), Scrub Football (2, 3), Assistant Wrestling Instructor (4), Middleweight Wrestling Champion (4), Welterweight Boxing Champion (3), Cosmo Club (3, 4).

H. G. SAWYER, "Herb" "A Gentleman"

Of Napa, California. Preparation: Napa Union High School. Physics Entered 1926



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DAVID WALTER SCHARF, "Dave" "The Simi Indian"

Of St. John, New Brunswick. Preparation: Los Angeles High School.

Geology

Tau Beta Pi

Entered 1926

Baseball (2, 3).

FREDERICK S. SCOTT, "F. S." also "Fred" "A Green Bow Tie with a Tux; Divergent Ends"

Of Kansas City, Missouri. Preparation: Los Angeles High School.

Press Club

Chemical Engineering

Entered 1926

Big T Staff: (2), Associate Editor (3), Editor (4); Tech Staff: (2, 3, 4), Sports Editor (2, 3); Tennis: Manager (2, 3, 4), Squad (3, 4); Exhibit Day Committee (3, 4); Class Treasurer (3); Class Dance Committee (3); Track (1, 2); Honor Key (3, 4); Senior Picture Committee (4).



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DAVID SHEFFET "Never Angry"

Of St. Louis, Missouri. Preparation: Venice High School. Electrical Engineering Entered 1926

Tau Beta Pi

Dorm Club (1); Tech Reporter (1); Basketball Numeral (1); Radio Club (3), President (3); Tau Beta Pi Treasurer (4).

JOHN C. SHIELDS "Back East Yankee"

Of Bisbee, Arizona. Preparation: Avalon High School. Aeronautics Entered 1925

Gamma Sigma; A. S. M. E.

Swimming Team (1, 2, 3, 4), Captain (4); A. S. M. E. President (4); Aero Club (2, 3, 4); Class Vice-President (4); Chairman, Junior-Senior Prom Committee (4).





WICHAEL MORRIS SILVERMAN "Will That Kid Ever Grow Up?"

Of South Bend, Indiana. Preparation: Hollywood High

School. Mechanical Engineering Press Club; A. S. M. E. Aero Club (1); Tech Assistant Editor (3).

MYER STEIN "Neither He Nor His Epigrams to Be Overlooked" Of Missouri. Preparation: Roosevelt High School. Electrical Engineering Entered 1926

A. I. E. E.





THEODORE FRANK STIPP, "Ted" "Sincere and Friendly"

Of Chicago, Illinois. Preparation: Glendale Union High School.

Electrical Engineering

Entered 1926

Tau Beta Pi; Sigma Xi; A. I. E. E. Senior Picture Committee.

ROBERT I. STIRTON, "Bob"

"Accomplishment and Versatility, With a Harassed Look"

Of Port Huron, Michigan. Preparation: Manual Arts High School; U. C. L. A. (2 yrs.)

Chemistry Entered 1928

Pharos; Tau Beta Pi; Press Club

Chem Club (3, 4), Secretary (3); Press Club Vice-President (4); Tech: Assistant Editor (3), Editor (4); Throoper (4); Exhibit Committee (3); Honor Key (4); Class Day Committee (4).





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AUSTIN STRONG, "Austie" "A Good Fellow"

Of San Diego, California. Preparation: San Diego High School.

Electrical Engineering

Entered 1926

Pharos; Tau Beta Pi

Tennis Team (1, 2); Basketball Manager; Board of Control (2, 4).

JACK STURGESS, "Yukon Jake" "An Engineer and a Gentleman"

Of Troy, New York. Preparation: Glendale High School. Mechanical Engineering Entered 1925

Sigma Alpha Pi; Varsity Club; A. S. M. E.

Football: (1, 2), Letter (3, 4); Track (1, 2, 3, 4); Cross Country (1); Swimming (1); Varsity Club Vice-President (4); Class Athletic Manager (2); Big T Staff (3); Tech Staff (1, 2); Representative-at-Large (3); A. S. B. Vice-President (4).



KATSUNOSHIN SUZUKI "A Little Chap From Japan"

Of Kanagawa-ken, Japan. Preparation: Pasadena High School. Mechanical Engineering Entered 1925

A. S. M. E.

Cosmo Club (1, 2, 3, 4).

FREDERICK T. SWIFT, JR., "Ted" "When He Starts Talkin', Other People Stop"

Of New York City. Preparation: Pasadena High School. *Electrical Engineering* Entered 1926 Carnegie Seismological Laboratory, Pasadena, (3, 4); Chief Engineer radio broadcasting station KPPC (1, 2, 3, 4).





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E. MERLIN THAYER, "Mudge" "Urbane Affability"

Of Columbus, Montana. Preparation: Huntington Park Union High School.

Electrical Engineering Entered 1926

Effected 172

Gamma Sigma; A. I. E. E. Tennis: Numeral (1); Baseball: Numeral (1), Scrubs (2).

JOHN WILLIAM TOWLER, "Bill" "Energetic"

Of South Dakota. Preparation: Atascadero High School. Aeronautical Engineering Entered 1926

Gamma Sigma; Varsity Club

Class Secretary (2); Frosh Constitution Committee (1); Football: Numeral (1); Basketball: Numeral (1); Baseball: Numeral (1), Varsity (2), Letter (3, 4); Tech Staff (1); Big T Staff (1); Class President (2); Board of Control (3, 4); Senior Judge, Court of Traditions (4); Aero Club (4).





OSCAR FRANZ VAN BEVEREN "Studious But Human"

Of Ostende, Belgium. Preparation: Hollywood High School. *Geology* Entered 1926 Variation: Treach (2): Dorm Club (1): Coology Club (3, 4)

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

SAMUEL STEWART WEST, "Stew" "Super-Intellect"

Of Minneapolis, Minnesota. Preparation: Hollywood High School.

Physics Entered 1926 Fencing Club (3, 4); Tech Staff (4); Big T Staff (4).



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GEORGE RICHARD WHEELER, "Dick" "A Self-Made Man"

Of Chaney, Oklahoma. Preparation: Alpaugh High School (1 yr.); Delano High School, Delano, Calif., (3 yrs.). Electrical Engineering Tau Beta Pi; A. I. E. E.

Dorm Club (1); Baseball: (1, 2, 3, 4), Numeral (1).

DUDLEY LAWTON WHITE "The Virtue of Unobtrusiveness"

Of San Francisco, California. Preparation: San Jose High School; Culver Military Academy; U. of Southern California. Aeronautical Engineering Entered 1928

A. S. M. E.

Aero Club (4).



NATHAN DAVIS WHITMAN JR. "Humor and Charm, His Coat of Mail"

Of Los Angeles, California. Preparation: South Pasadena High School. Entered 1926

Civil Engineering

Pi Alpha Tau; Tau Beta Pi; A. S. C. E. Football Manager (2, 3, 4); Tech Staff (1).

WALTER D. WILKINSON JR., "Walt" "Originality and Imagination"

Of Chicago, Illinois. Preparation: Lyons Township High School, LaGrange, Ill.; Santa Barbara High School. Chemistry Entered 1926

Pi Kappa Delta; Drama Club; Am. Chem. Soc.; Press Club Big T: Photo Staff (1): Track Editor (3): Class Editor (4)

Big T: Photo Staff (1); Track Editor (3); Class Editor (4);
Tech Staff Feature Writer (4); Class Day Committee (4);
Dorm Club (1); Aero Club (2); Chem Club (2, 3, 4);
Oedipus Rex; Shewing Up of Blanco Posnet; Andria, Publicity Manager; Track: Numeral (1), Varsity (2, 3); Cross Country: Numeral (1), Varsity (2, 3); Intramural Tennis Champion (2); Varsity Debate (2, 3, 4); Honor Key (4);
Drama Club, Publicity Manager (4); Class Day Committee (4); Gym Pamphlet (4).



The Big

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ROBERT W. WILSON, "Bob" "A Man of the Wide Open Spaces—A Geologist"

Of Oakland, California. Preparation: Franklin High School. Geology Entered 1926 Tau Beta Pi

Chem Club (2); Geology Club (3, 4); Track: Numeral (1), Varsity (2, 3).

OSWALD F. ZAHN, JR., "Ozzy" "An Honest Lad With Curly Hair"

Of Los Angeles, California. Preparation: Coronado High School.

Mechanical Engineering

Cross Country (1); Track: (1, 2, 3, 4), Letter (4); "Y" Cabinet (3), President (4); Board of Control (3); Glee Club (3); Court of Traditions (3); Senior Gift Committee (4).

Gamma Sigma



Entered 1925



SIDNEY ZIPSER, "Sid"

"Conscientious, Optimistic and Capable Executive"



Of Los Angeles, California. Preparation: Franklin High School.

Electrical Engineering

Entered 1926

Gnome Club; Pi Kappa Delta; Press Club; Drama Club

Student Body President (4); Honor Key (2, 3, 4); Executive Committee (4); Board of Control (4); Yell Leader (2, 3); Throoper (3, 4); Faculty-Student Relations Committee (4); Athletic Council (4); Class President (3); Class Treasurer (2); Debate: Frosh (1), Varsity (2, 3, 4); Oratory (2); Extemporaneous (3); Pi Kappa Delta Plays (1, 2, 3); Drama Club Plays (1, 2, 3, 4); Drama Club President (3); Tech Staff (1, 2, 3); Big T Staff (2, 3); Exhibit Day Committee (3); A. I. E. E.; Cosmo Club; National Student Federation Congress (4); Pi Kappa Delta Regional Convention (3).



CASUALTIES

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Allen, Horace Donovan	Announcer-Radio Sta. KTM.
Arndt, William Frederick .	Test Dept., U. S. Motors, L. A.
Babcock, William Chapman	Class '31
Beam, Jess Alexander	Operator in L. A. City Power House No. 3
Booth, Eugene Charles	Attending U. S. C. '30
Bovey, Robert Standern	Union Oil Co.
Bussey, George Leland	Class '31
Clark, Willis Henry, Jr	Telephone Company
Cogen, William Maurice .	Transf. to Class of '31
Cordes, Nelson Myers	Transf. to Class of '31
Chamberlain, Glen John	Transf. to Class of '31
Crawford, John Henry	Transf. to Class of '31
Dickinson, John Lovewell .	North Carolina State U.
Dmytrick, Edward	Fox Studios, projection dept.
Douglass, Paul William	Working as mason and contractor, Pasadena
Eaton, Myron Lansing	Surveying in Azusa
Ely, Paul Marcellus	Riverside Cement Co.
Fink, Kenneth Charles	United States Weather Bureau, Redding, Cal.
Folchemer, William Honnold	Iowa State College
Friess, Edward William	Married, Electrical Contractor
Frye, Calvin Barton	Transf. to Class of '31
Gordan, Joseph Morris	L. A. County Road Dept.
Green, Lowell F	Living at Santa Ana
Green, Frederick Hammond	Whittier College

The Big

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Hacker, William Dillon	Transf. to Class of '31
Hemming, Robert Le Grand	San Diego State '30
Herd, Charles Melvin	Engineer City of Pasadena
Hoch, Winton	Transf. to Class of '31
Hollister, Ezra Robinson .	Occidental
Holmes, Howard Oyen	Two years leave of absence, Class of '32
Hopson, Howard Elverton .	Riverside Cement Company
Horton, Warren Birch	Transf. to Class of '31
Hubbard, Walton Jr	U. S. C.
Humphreys, Wendell Lewis	Employed, Huntington Park
Infield, Jack Floyd	Emsco Derrick and Equipment Co.
Janofsky, Jack	Sound Studios, Columbia
Kubow, Henry Hidemaro .	Employed in L. A.
Kuert, William Ford	Missouri Neon Light Co.
Langsner, George	Transf. to Class of '31
Lea, William Francis	Sales Dept., Lea Steel Sash, L. A.
Liedholm, George Edward .	Transf. to Class of '31
Long, Spencer William	Design Engineer, Torrance, Calif.
MacLane, Glenwood Lyle Jr.	U. of Arizona, Agriculture
Meyer, Glenn Harold	Attending U. C. L. A.
Mitchell, Gordon S	Universal Studios, sound dept.
Morton, William	C. E. work on Reclamation Project, Idaho
Musset, Roger Marx	U. C. L. A. Class of '30
Newcomb, Daniel Albert .	Transf. to Class of '31
Norden, Eugene Gustave .	Jr. Accountant Hashin's and Seil's, L. A.
Oaks, Robert Martin	Transf. to Class of '31



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Orelli, Christopher Camillo Electrical Wiring Business, Placerville, Calif. Overhage, Carl F. J. . . Transf. to Class of '31 Supply Clerk, Calif. Supply Co. Ramey, Robert Clark . . . Reynard, Willard Grant. Working for Amer. Pot. and Chem. at Trona . Transf. to U.S.C. Ruff, Theodore Frederick . Transf. to Class of '32 Sarno, Dante Hector . . Schuck, Anthony Goodrum . Working for Burr, Conrad, and Broom, L. A Slick, Wilfred Larson Westinghouse, L. A. Scott, Paul Lyman . . . Working for Rust Nurseries Sherer, Hiram Fred . . . Glendora, Calif. Shull, George Orval . . . Transf. to Class of '31 Stevenson, Clinton Howard Iowa State College, Ames Stroud, Robert Addiss Union Oil Co. Triggs, Matthew Lovell . . Georgetown University Trostel, Everett G. Transf. to Class of '31 Vance, Gordon Burnell . University of California Walker, James Nathan Transf. to Pasadena Junior College . . Wern, Andrew William . Shell Oil Co., Santa Ana 1 Westphal, Richard Dodd Victor Talking Machine Co., Sales . White, Fletcher Harmon Oil Fields, Ventura, Calif. Transf. to Class of '31 Wilmot, Charles Alfred . . Wixson, Frank Melvin . . Murphy Body Works, Pasadena Yoshioka, Carl Kaoen Transf. to Class of '31

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CIT





OTHER CLASSES



CIT



The Big





Smits President

Labory Vice-President Buffum Secretary Brooks Treasurer

JUNIOR CLASS

The members of the Class of 1931 under the leadership of Aubrey Horn, Jack McGarry, Jack Hatcher, Arthur Brooks, Lester Frick, and Don Prentice; president, vice-president, secretary, treasurer, athletic manager, and member of the board of control, respectively, started their careers at Tech wearing the conventional beanies and obeying no more of the freshman rules than were absolutely required by the Sophomore deputies. The end of the first term brought with it the traditional Frosh Student Body Dance which was held in the Hotel Vista del Arroyo and which is still remembered as an excellent dance with most unusual lighting effects. Because of the loss of the sack contest, the class gave the Rodeo Dance to the Sophomores in Culbertson Hall.

With Bob Lehman at the helm and John Mehl, Howard Smits, Arthur Brooks, Lester Frick, Lee Pratt, Oscar Newby, Herbert Ingham, and Jack McGarry assisting him, the class came back in the following fall and did its best to keep the Freshman Class on the straight and narrow path by strict enforcement of the rules and by a few bathing parties in the liquid-air pond for rebellious characters. The Class of '31 won the push-ball contest held between halves of U.C.L.A.-Tech football game and ended all hostilities at the Rodeo Dance which was held in Culbertson Hall. The Sophomore Student Body Dance, held as usual at the end of the second term, was conceded to have been the best of its kind in years.

Howard Smits was elected president of the Junior Class and Ray Labory, Emery Buffum, Arthur Brooks, Walter Dickey, Bob Lehman, George Rice, and Oscar Newby helped him in the capacities of vice-president, secretary, treasurer, athletic manager, and representatives on the board of control, respectively. The experience gained in previous years was felt when the Class of '31 won the interclass football championship. The debating team had more than its share of men from the Junior Class. Five members of the class were given travel prizes, and ten were honored by being initiated into Tau Beta Pi.

On February 28, the Junior Class held a dance in Dabney Lounge with such success that a Tea Dance was held on May 24 in the same place with the cooperation of the Senior Class. The Junior-Senior Prom was held at the Annandale Country Club as the concluding event of the year, and it was a success not only because of the ideal location, but also because of the very novel favors.



CIT



The Big





Parsons Vice-President

Carey President Ayres Treasurer

Maass Secretary

SOPHOMORE CLASS

Versatility in participation in the varied phases of college life, and existence and action as an integral unit rather than as a collection of individuals are the keys to recognition in Institute history for any class. Such are the characteristics of the Class of '32.

Under the leadership of Jack Chambers as Freshman Chairman and with the advice of Dean Macarthur, wise in the ways of Sophomores, the class was able to show early an organized front to the attempted hazing of the first weeks. They also performed creditably in the traditional push-ball contest, climax of class rivalry. As losers they had the honor of presenting a Rodeo dance in Culbertson Hall.

Election of officers at the beginning of the second term found Chambers president with an effective group under him; a group that was able to lead the class for the remainder of the year into all the activities of the Institute. Socially the class contribution was the Freshman Student Body dance, held in the Hotel Huntington. It was the usual delightful product of the arts of the decorator, the musician, and the caterer. In the field of inter-collegiate athletics the class took two minor sport championships, swimming and tennis, and with an unusually excellent track team won the Freshman Conference track championship. In the intra-mural contests the entries from the Class of '32 could always be found near the front. Its basketball, baseball, and football teams performed creditably in the season's schedule. In extra-curriculum activities the representation from the class was unusually large and effective. Debate, glee club, band and orchestra, editorial staffs, and other activities received their share of attention. Such was the interest taken in this branch of endeavor that the end of the year found three members of the class winners of the Honor Key, for participation in activities. In scholarship the point average for the class for the year was very near to one hundred and twenty.

Returning for the second year, the class chose for its leader Bob Carey and settled down to the business of maintaining the record of the previous year. Class officers for the year were:

President	TreasurerJohn Ayers
Vice-President PAUL PARSONS	Member Board of Control. JACK CHAMBERS
Secretary RANDAL MAASS	Member Board of ControlCLARK GOODMAN

1930
CIT



The Big



Wright Treasurer

Scholtz President Johnson Vice-President Backus Secretary

FRESHMAN CLASS

The largest freshman installment in the history of Cal Tech arrived last September fully one hundred and sixty-one strong. The cream of over sixty-five high schools are represented in this group, from Florida to Washington, from old Mexico to Canada, and even from Hawaii. Opening the school year right, a large representative group of the first year men journeyed to Idyllwild where an enjoyable time was spent, enabling the men to learn Tech traditions and to meet Tech men.

Along with their scholastic work, the Frosh broke into the social life of Pasadena by giving and attending several dances during the first term. Having lost the Rodeo to the Sophomores by a wide margin, the freshmen had to give them a dance, which turned out to be quite a gala affair. In the middle of the dance, the Frosh were allowed to doff their "dinks" and throw them away, ending their probation. At the start of the school year, John Monning was selected Frosh chairman and helped to steer the freshman through their first term's difficulties.

At the close of the first term a gala affair, the Freshman-Student Body Dance, was staged at the Oakmont County Club. A great crowd was present, making the large hall look exceedingly small. Opening the second term by electing their class officers for the remainder of the year, the Frosh class settled down to business after a two weeks' vacation. The officers elected were: Walter Scholtz, president; Sam Johnson, vice-president; Norman Wright, treasurer; Harrison Backus, secretary.

Of the 161 who began school in September, eleven were found to be missing on the return to classes in the second term. Three of these men secured leaves of absence while the remaining eight were given indefinite leave of absence, not by choice. A large number of the Frosh made the honor sections, as a result of their first term's work, and from all indications will undoubtedly keep up their good work. One of the accomplishments of this year's class was the beginning of a dramatic club open to those men desirous of learning more about the drama. This movement was started by one of the freshman, Richard Waterhouse, who saw a need for such a class among those fellows who wanted to give and criticize parts of plays. One of the functions of the organization will be to prepare the way for the men desiring to enter the honorary dramatic fraternity at Cal Tech.



CRO-MAGNON

The influx into southwestern Europe of the very advanced Cro-Magnon, the first of the modern "wisemen" Homo sapiens, may have had something to do with the disappearance of the Primitive Neanderthals. Their remains found in caves at LeMadeline, Font de Gaume and elsewhere show a high forehead and a prominent chin, while the ridge above the eyes has been reduced. The average height of a large number of skeletons is six feet, one and one-half inches, which stands in marked contrast to the Neanderthal type and which exceeds the average of the tallest living races. Their flaked instruments are indicative of upper Paleolithic stage. Just as important as the bodily improvements are the more intangible developments in the mind leading to the production of remarkable art. Colored paintings on the walls of caves in France depicting contemporary Pleistocene bison and horses, show a high degree of aesthetic appreciation.



BOOK III ATHLETICS

CIT

Foreword

ATHLETIC seasons are, for Tech, always successful. For one who would measure a successful season by the increase in gate receipts over those of last year, or by the number of new cups in the trophy case, or by the favorable magnitude of the difference between the home scores and the opponents' scores, there would be little success in athletic activities at the Institute. Successful seasons, as we attempt to define the phrase, are determined, not by assets expressed in dollar signs, new trophies, or large scores, but by the benefits secured to the men who try out for the many teams.

Engineers and scientists have little use for physical activity as a means for winning points or trophies but they are concerned with the physical and mental development that play for its own sake will give. The often-asserted character building values of competitive athletics become much more deeply imbedded when the play is motivated both by pure love of the game and by the ambition of self-mastery. The emphasis upon ultimate physical efficiency rather than immediate performance resulting in points makes the Tech athletic program much more lasting in effect and democratic in spirit than usual college athletics, which soon acquire an aristocracy of point gatherers.

Whatever the score happens to be, the success of the contest is certain even if only one man has risen to heights which he had never before reached and thought that he never could reach. If the entire squad has improved in playing technique, in physical endurance, has developed a spirit of teamwork, of dogged determination, then the success of the season is assured. This emphasis upon physical and mental development, resulting chiefly from Coach Stanton, is the only practical system for a technical school to adopt. The ever increasing difficulty of selecting one man as the winner of the Wheaton or Rawlings trophy proves the value of the Tech physical education program. The task now remaining is to extend this intensive program to the remainder of the student body, not out for athletic teams, by means of an adequate gymnasium which the students hope will soon become a reality.

J. W. G.

CIT





Fox Stanton

COACH "FOX" STANTON

One of the truly valuable men who have worked consistently and conscientiously for the Institute, is no other person than Coach "Fox" Stanton. His courses in athletic training are of a very high degree of excellence, and the "Fox's" ability to turn out season after season clean-cut, hard fighting teams has merited recognition in the college sporting world. Having the power and ability to direct athletics at the Institute in his own way, accounts in a large part for Coach Stanton's continued success as head coach. Capable of turning out from "raw" material athletic competitors of high note, Stanton has made it possible for Tech to carve a name for herself in Southern California's sports.

The emphasis laid on fair play and the acceptance of defeat with a smile leaves a lasting impression on all Tech students, enabling them in later years to bear the brunt of life's continual battle and play the game honestly. These precepts of the "Fox" have produced results far above expectations in all sports, whether in football, baseball, basketball or track. The meritorious playing of Tech teams has earned for them the phrase that an Institute team is capable of "upsetting the dope" of any contest. The "Fox" has earned the respect and goodwill of every man during the last nine years.

CAPTAIN TOM BERNHARDI

Tom Bernhardi, captain of our last basketball team, proved to be a most successful leader. He is one of our most outstanding athletes, having earned his varsity basketball letter for the last three years. Combined with his athletic ability this modest and unassuming youth has a quality of leadership that makes him the inspiration of his teammates.

Captain Bernhardi plays right guard, and to the uninitiated his playing seems less spectacular and colorful than the playing of some of his teammates. To one well versed in the art of basketball, however, Captain Bernhardi's playing appears much superior to that of some spectacular but erratic forward. The secret of Bernhardi's great playing is his consistency and steadiness. Seldom does one see Bernhardi caught off his guard. He is in the game every minute of play following his opponents' every move closely, and with his keen basketball sense he defends his goal with great dependability.

Tom Bernhardi's athletic career is a concrete proof that a student can devote enough time in becoming proficient in a sport and also have enough time and energy left to be a leading scholar. Bernhardi is a member of Tau Beta Pi, and is one of the most outstanding students of chemistry in the class of 1930. In his career at Tech, Bernhardi has set an example for men who wish to attain all around



Tom Bernhardi

development. Bernhardi's personality and spirit are of the finest which have ever been encountered on the Tech campus. It is with considerable sorrow that we see Tom graduating and leaving collegiate competition forever.



CAPTAIN LESTER BOYLE

Lester Boyle, captain of our last football team, proved to be a most successful leader. He is one of the most outstanding athletes at Tech this year and one of the best ever developed here.

So great was the confidence that the 1928 Engineer Squad had in Les Boyle, then among the most dependable players of the squad, that he was chosen to pilot the 1929 varsity through its tough season. Lester Boyle has been playing football at Tech ever since he entered. Under Coach Stanton's direction he has learned the game thoroughly and deserved, the honor his teammates bestowed upon him. He is thoroughly dependable besides being a player of great ability and a student of the game.



Lester Boyle

Les Boyle has had a great year at the halfback position. Whenever the Beavers resorted to an aerial attack it was Boyle who usually sent the pigskin hurtling through the air with the same accuracy that he showed last year. On the defensive play Les improved greatly during the season and made it hard even for the heavy Stanford backs to get anywhere. Boyle has done better at booting the ball than any Engineer for a long time, many of his punts going from 35-40 yards. The spirit that Les Boyle has shown in the midst of what some people would call a slim season was a deciding factor in holding Stanford and defeating Redlands and San Diego.

CAPTAIN WALTER AYRES

Captain Walter Ayres has been the victim of bad luck in the form of a strained ligament for the past two seasons. No sooner does the trouble seem to disappear than it returns with redoubled vengeance and always at crucial moments of the year. A strained ligament, which has ruined more than



Walter Ayres

a few great sprinters, has prevented Walter from approaching marks which his ability would ordinarily warrant.

As a freshman Ayres' track career promised to be a very brilliant one. During his initial season, he broke the long existing freshman track record in the broad jump by leaping a half-inch beyond the 21 foot marker. This record made in 1927 has not been broken in spite of the record breaking habits of the freshman track teams for the past two years. Walter is also a sprinter of no mean ability and often when his ligaments held together, has approached ten flat in the century several times.

This season Captain Ayres has taken very much care to round into shape slowly in order to ease his legs into running as smoothly as possible. His leg gave way early in the season, and, from his later performances, appears to have been effectively cured. It may be that Walter has broken his long standing jinx and will be able to perform in a reasonable relation to his real ability before the season is over.

Already his marks of well over 21 feet 6 inches in the broad jump and of near ten flat in the century begin to show his true ability. Captain Ayres' cheery smile and encouragement has inspired every member of the team to go out to do his best regardless of the kind of competition.



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William Hatch

MANAGERS

This year the football team was greatly aided by a very efficient and hard working group of managers. Nathan Whitman headed the list as Senior Manager. Under him were Hacker and Grafman, Juniors; and Kent, Arnerich and Sharp, Sophomores. These boys went through a season of much hard work with little credit. Every night they were on duty before the team was out, and then on the jump all the time until the team left, every day of the week; their main task being always to keep the team in supplies. This job is one of all work and no play, and it takes a real sport to stick with it throughout the season.

The basketball manager has to be a versatile person; his duties being varied and many. The Senior manager has the task of securing officials, practice games, keeping tab upon his assistants and traveling with the team to all the games. The other managers keep the team supplied with towels, socks, and tape; pump up balls, act as doctors, and in many cases they serve as timekeepers, scorekeepers, or referee. Austin Strong was Senior manager this year. Levine, a Senior, and Buffum were Junior managers; while Chambers and Gregory acted as Sophomore managers. While these boys do not work as hard as football managers, they deserve much credit for the help they give the team.

The track managers make it possible to have representative teams. They have to always be on hand to see that any equipment needed is there, to set hurdles up, and to keep the track clear for sprinters. The task of the track managers requires, not only work with the team, but several hours a week outside of manual labor. This year Kenny Miles supervised the hard working managers. Under him were Horton and Murdock, Juniors; and Bates and Hibbs, Sophomores. Managers do not receive much glory for their work, therefore they deserve much credit from all. The one thing, which makes managing worth while, is that the managers get to go to the meets with the team.

Frank Crawford ably held down the position of Senior manager of baseball with Bob Lehman, Junior; and Ayres, Killgore, and Cline, Sophomores, acting as his assistants. Their duties resemble those of the managers of the other sports.





Rossall

THE SPIRIT OF THE GAME

There is no finer sight to see on a football field than the rousing, jubilant cheering and yelling of a group of men whose team has just crossed their opponent's goal line for another touchdown. Something in one of those victorious cheers seems to grip the heart, loosen the mind, and give one a feeling of greatness and satisfaction. The spirit of the game is always to be found in a Tech yell, and our rooting section knows when and how to burst forth with a happy song or a spirited yell. Much of the success of a good cheering group is dependent on the initiative and personality of the yell leaders. It is undoubtedly these distinctions which have helped to make the head yell leader, Kenneth Rossall, and his two assistants, Harold Roach and Robert Ingham, popular on the football field and campus. Each football game has found these three men on the job waving their hands and arms, swaying their bodies, and yelling their lungs out for the dear old Alma Mater.

No group of football fans have followed more faithfully the directions of any yell leader, than our Tech men have. The vim and vigor of the fighting Beavers coupled with the pep and spirit of the spectators has pulled the Engineers through many a tight place and oft-times helped them win a game. Although our football team had only a partially successful season, a sufficient number of students were always at the games to give their team the necessary pep and spirit to pull through to victory. At the close of each game, whether it turned out to be a victory or a defeat, the entire student body rises to sing the school song, which proves to others that our men fight, not for a championship, but for the individual contest. This feeling of sportsmanship has gained for the Tech students and the Beaver squad a great deal of respect from all rivals. One of the fine points to be found in each member of the varsity eleven is the fact that fair play and a genuine feeling for the game of football is always uppermost in their minds, and this, of course, adds to the interest and enthusiasm displayed by the spectators.

One of the precepts of the Cal Tech commandments is that a man should keep up his fighting spirit even in defeat. Thus, when a team tries hard and the student body is backing them up wholeheartedly, nothing can keep our men from victory, except a team which has still better support from its students. CIT



Baseball Managers Basketball Managers

Minor Sport Managers

Football Managers Track Managers

> The Big

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Boyle

WHEATON TROPHY

The Wheaton Trophy, the award prized most highly by a football man, signifying as it does, that the winner has been acknowledged by his teammates as a leader in sportsmanship, highest in moral influence upon the team, and high in scholarship, was awarded this year to Lester Boyle.

Les has led the football team with his highly consistent playing throughout the season. As Captain of the team this year he has filled the position well. His steady playing and hard fighting kept the team out of many bad holes, and his value as a leader of the team has been clearly shown. During his Junior year he was outstanding in the backfield and he has successfully defended his position this year. He has also turned out to be one of the great triple threat men of the conference.

This trophy, a beautiful silver cup, was presented to the California Tech student body at the close of the 1924 football season, by Mr. Wheaton of the T. V. Allen Company in Los Angeles, and formerly of Yale. Mr. Wheaton, who is an ardent follower and supporter of collegiate sport, sought to increase interest in collegiate sports by furnishing an added incentive to athletic achievement. The Wheaton Trophy representing a mark of superiority, has been presented as this incentive. As a student at Yale, Mr. Wheaton became interested in football; and since that time he has been a player and a coach. For the past few years, he has transferred his entire interest in this line to sports at Tech.

The existence of this trophy and the ideals for which it stands have done much toward fostering a clean competitive spirit, and in improving the mental attitudes of the players. The Wheaton Trophy has done a great deal to raise the plane of football here at Tech to the high position it now occupies. Also this trophy is influential in fostering the pursuit of sport for its own sake, which should be its main objective.







Muff

RAWLINGS TROPHY

The Rawlings Trophy, a beautiful silver cup supported upon a tripod of baseball bats, plays the same role for the baseball man, as the Wheaton Trophy does in football. This trophy was presented to Tech by the Rawlings Company of St. Louis. Its purpose is to create a greater interest in the national game, baseball.

Each season a man is selected from the baseball squad who, in the opinion of his teammates, typifies the highest ideals of Tech athletics. Every man on the squad is graded by his fellows according to the following qualifications: Sportsmanship, 15 points; moral influence upon the team, 15 points; improvement during the season of intercollegiate competition, 20 points; playing ability, 50 points.

The selection of three names to share the coveted Rawlings Trophy for 1929 surprised no one, for the outstanding sportsmanship and ability of any of the men throughout the season was beyond reproach. Not only is this the first time three names have appeared together at the base of the cup, but it is also the first time that two names have appeared twice. The winners were Alphonse Cramer, Elmer Muff and Homer Reed.

Elmer Muff has attained the distinction of twice winning this trophy. He won it first in 1927 when only a Sophomore, and then last year when he was a Senior. Another unusual event in Muff's baseball career was his selection as captain of the 1928 team when he was only a Junior. During his career Muff has held infield positions, filling these posts to perfection. His cheerful, sportsmanlike conduct on the diamond has won for him the universal respect and admiration of his fellow athletes.

Unfortunately at the date of publication it was impossible for the Big T to present this year's winner of the trophy to the student body.

In Appreciation

TO present the sports of the year as clearly and concisely as possible by presenting much of the information in a condensed form in preference to customary extended expansions of detail is the major aim of this department of the annual. Without the cooperation of the men who have been writing sports, the realization of this aim would be impossible. Because of the lateness of the conference track meet and most of the baseball season, it is impossible to give a complete review of these sports.

The success of the sports whose reviews follow largely results from the work of the Athletic Council whose membership includes the coaches, senior managers, and faculty men. Without this coordinating influence, the athletic program at Tech could not function as a united tendency toward physical development. To everyone connected with athletics, coaches, managers, team members, scrubs, yell leaders, and all others, should go the credit for the year's success in sports.

J. W. G.







FOOTBALL





SCORES

Cal Tech 26, La Verne 7

Cal Tech 0, Pomona 13

Cal Tech 0, Arizona 35

Cal Tech 0, U.C.L.A. 31

Cal Tech 0, Whittier 19



SCORES

Cal Tech 0, Stanford 39 Cal Tech 13, Redlands 0 Cal Tech 0, Occidental 27 Cal Tech 19, San Diego 6

Captain Boyle

VARSITY FOOTBALL

Greeted by a very large turnout of willing candidates, Coach "Fox" Stanton undertook his annual task of tuning up the Engineer gridiron machine for its fall operation. The yearly process was made harder because of the few returning lettermen in the host of the more inexperienced prospects. A hard schedule, with trips from Tucson to Palo Alto, had been arranged for the Beavers. The last two weeks of vacation were sacrificed by the members of the varsity squad because of the La Verne game, which came before school officially opened.

The Tech team was given no chance at all to be on either end of the conference standings when the end of the season rolled around, but was given a very good opportunity of finishing about in the middle of the group. Occidental and San Diego were the favorites to win the conference, with Pomona and Whittier having very good chances to emerge from the season with the championship. The pre-



Over the line

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FINAL CONFERENCE STANDING

Occidental						4	0	0	1.000
Pomona .									.833
Whittier .						3	2	1	.600
Cal Tech						3	3	0	.500
Redlands						2	2	1	.500
San Diego	•	•				1	5	0	.167
La Verne		•			,	0	5	0	.000



SUMMARY OF SCORING

Total scores made by opponents, 177. Total scores made by Cal Tech, 58. Total scores made by Conference opponents, 72.

Total scores made by Cal Tech against Conference opponents, 58.

"Fox" Stanton

dictions concerning the possibilities of the Beaver squad were made with the qualification, necessary because of previous events, that the Engineers might stage one or two disastrous upsets before the season terminated.

Led by Captain Les Boyle, six lettermen including Liedholm, Kuhn, Sturgess, Crawford, and Alderman, headed the list of football candidates for the 1930 season. Among the other men who reported to Stanton for practice were numeral winners from the frosh team of the year before, graduated scrubs, and some men entirely new to the gridiron game. These men included Goodman, McKinley, Newby, J. Cline, Bruderlin, Maass, Bennett, Schultz, Gunderson, Morris, Keeley, Ayers, McGarry, Ugrin, Hesse, Rice, Brooks, Hayes, Finney, Levine, Dickey, Murdoch, Paulson, Eastman, and Shuler.

The movement of the ball by quarters is shown by the grid-graphs on which progress of the ball in Tech's possession is shown by the solid line, punts and kickoffs by the dot-dash line, and gains made by opponents by the dash-dash line. The Tech goal is always at the top of the grid-graphs.





Get That Man

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Liedholm

Starting off their conference season with a bang, the Cal Tech "Engineers" on the first kick-off marched sixty yards down the

Alderman

field for a touchdown against La Verne. Subsequent touchdowns brought the final score up to 26 points for Cal Tech against the Leopards' 7.

The brilliant work of the Beaver backfield in their fast plays partially offset the poor showing of their punting power. Bill Shuler, as the starring Engineer linesman, caught a long forward pass in the third period to score Cal Tech's second touchdown. Shortly following this, and in the same quarter, Dickey put over another score with the help of Sturgess and Boyle. The fourth period saw McMillan complete the total by working the ball from a mid-field position to the goal line in a series of flashing runs. Bennett converted for Cal Tech following the second and third touchdowns. The lone score of the La Verne team came in the third quarter when Calver completed a long forward pass to Hubbell, who got by the Tech secondary defense and romped to the goal.





Crawford

The Pomona Sagehens, with their strong offensive attacks, were able to score a 13-0 victory over the Engineers on Oct. 3. When

Newby

not occupied in defense of their goal, the Engineers performed some well executed passing which once took them to the one foot line.

This game brought to our attention the ability of Bill Shuler, Sophomore tackle. Dickey, Crawford, and Sturgess made show of great promise for the ensuing season. Captain Les Boyle displayed his ever dependable playing.

Twice in the first quarter the Engineers held the Sagehens from their goal. In the second quarter, however, a pass on the ten yard line from Hartman to Dyer could not be stopped, consequently Pomona scored their first touchdown, giving them six points plus the point for Hartman's goal kick. In the third quarter, Pomona found themselves on Tech's two yard line but were unable to score. The fourth quarter added to the score of neither side.





Maass

Football under the stars! In the only night game of the season for the Engineers, their old ex-conference rivals, the Bruins,

Brooks

defeated them by a score of 31-0. This game was one of the wildest struggles of the season. There were penalties, fumbles, and intercepted passes galore. Of the fourteen passes by both sides which finally found their way into somebody's hands, twelve were intercepted.

At the outset of the game the teams seemed to be evenly matched but after about ten minutes of playing, California intercepted a pass in midfield and collected a touchdown in four downs. After that the entire first half belonged to California. At the beginning of the second half Tech looked like a million. After getting possession of the ball in their own territory, the Beavers started a march down the field, making five consecutive first downs, only to lose the ball by a fumble on California's ten yard line. After this sudden burst of speed the fever died and California collected her remaining three touchdowns without difficulty.



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Hayes

Finding themselves unable to cope with the strength of the opposition, the Engineers fell before the onslaught of the Whit-

Goodman

tier Poets by a score of 19-0. Although the Tech line demonstrated its strong defensive power, the Engineer backs looked bad and handed the "Friendly Quakers" many chances to score which they eagerly snatched up. Bill Shuler at left tackle for the Beavers was the best man on the field and proved that he is fast becoming the best tackle Cal Tech ever had. This tall, dark-haired fellow was in every play and always on the ball. Not content with stopping plays directed at himself and having a keen insight of the plays pulled by the opposing team, Bill managed to place himself in the way of a ball-carrying opponent very frequently.

This game very poorly represented the defensive and offensive power of both teams, but nevertheless, showed that the Poets had the edge on the Beavers. Of the three touchdowns the Poets scored, two of them were made on passes under the noses of the Tech backfield men who must have been asleep.





Levine

The meager handful of Tech rooters who went to Palo Alto November second to witness the Stanford game were given

Shuler

a rare treat in the line of football which well repaid them for their trouble. It goes without saying that Tech lost, for Stanford was conceded to have one of the best teams in the United States. In fact, the score was 39 to 0. Nevertheless the game was one of the season's best exhibitions of Tech fight and spirit.

The first touchdown was the only easy touchdown that Stanford got. For all of the rest they had to fight and fight hard. Although, due to the superior weight of the Stanford backfield, it would usually take two Tech men to bring down the pill packer, nevertheless it seemed that there were always two men there to stop the play. The admiration which the superb Tech defense aroused is attested by the honor Coach Pop Warner paid two Tech men, Shuler at tackle and Hayes at end, in conceding them honorable mention in his selection of the all Pacific Coast eleven.





Hesse

The Engineers displayed one of the season's best games of football in their battle with the Bulldogs played in the Rose Bowl

Morris

Nov. 9th. Tech earned its 13-0 victory in this hard fought contest. Before the game both teams were given an even chance to win and it was not without a skillful defense that Tech effectively smashed Redlands' aerial attack. The ability of the line in this struggle was shown by the fast work made of blocking punts and recovering fumbles.

In the early part of the first quarter, the Engineers marched from their own 40 yard line to Redlands' 30 yard line. With a long pass from Boyle to Shuler and a ten yard run by Shuler a touchdown was scored. Boyle easily converted. During the second quarter the Engineers carried the ball to the two yard line only to fumble it. The Bulldogs then proceeded to kick but the attempt failed for the Tech line blocked the kick and recovered the ball for a touchdown. Boyle failed to convert. The final half witnessed a desperate aerial attack by Redlands. Passes from Beiden to Loper were completed a few times but the Beavers always held.





Sturgess

Striving hard to stop Oxy's power drives during the last three periods, Cal Tech put up a great offensive battle, but succumbed

Paulson

to their opponents' skillful playing by a score of 27-0. The Occidental Tigers were easily held by the Engineers during the first quarter of the game from crossing their goal, although many opportunities rose before the Bengals. The Tech line was not up to its usual form and many holes were opened through them by the opposing side.

The Tigers were started on their way to a second touchdown when an intercepted pass, captured by an Oxy man, put the ball deep into Tech's territory. A completed pass and a short run enabled the Tigers to chalk up another seven points following their conversion. Smooth playing and fast headwork on the part of the Tiger backs brought the ball from their thirty-two yard line to another goal and score. This happened in the third quarter and before the period ended another score was made following a Tiger pick-up of a Tech fumble near the Engineer twenty-yard line. Throughout these maneuverings the Tech line failed to function properly against their opponents' stronger and harder hitting line.



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Bennett

A fighting finish to a hard fought season came when the Engineer varsity defeated the San Diego State Aztecs at the southern

Kuhn

city on Thanksgiving Day. Within five plays after the opening of the second quarter, the Aztecs scored a touchdown which was not converted. The Beavers immediately started a march down the field and did not stop until they had tied the score. With the conversion, the Beavers went into the lead and never once were forced to relinquish it.

A husky kick-off, from the toe of an Aztec to the 5 yard line was rushed back to the 32 yard mark and from there the Beavers smashed their way to the 15 yard line and then scored on a pass. Almost immediately after, the Beavers marched from their own 40 yard stripe to another touchdown and six more points. Both teams tightened and neither was within scoring distance for the remainder of the game. In this game, the Engineers found themselves and played a great game, closing a season full of real Engineer fight.





(Left to right): Coach Stanton, Goodman, McKinley, Newby, J. Cline, Bruderlin, Maass, Sturgess, Bennett, Schultz, Gunderson, Morris, Dr. Thompson, Gottschalk.

Keeley, Ayres, McGarry, Ugrin, Hesse, Kuhn, Rice, Brooks, Liedholm, Alderman, Hayes, Crawford, Finney, Levine, Dickey, Captain Boyle, Murdoch, Paulson, Eastman, Shuler.

THE SEASON'S END

The season ended after a sweet victory over San Diego with the Engineer varsity in the midst of the conference heap with an equal number of games won and lost. Stanford was surprised at the stubborn defense of the much outweighed Beaver players, and Arizona heat and U. C. L. A. good luck diminished Tech scores to zero but did not subdue the fighting Engineer spirit. The season was ever representative of the best traditions of Tech fight and never did defeat dim the morale of the squad.

Walter Dickey, one of the most promising fullbacks ever to attend the Beaver school, was chosen by his teammates to pilot the squad through the perils of a very hard season next year.

LETTERMEN

Frank Alderman Elliott Bennett Arthur Brooks Lester Boyle Albert Crawford Walter Dickey Samuel Eastman Clark Goodman Edward Hayes Kedrick Keeley Truman Kuhn



Captain Elect Dickey

LETTERMEN

Ernest Levine George Liedholm Randall Maass Oscar Newby Ross Morris Henderson Paulson George Rice William Shuler Jack Sturgess Nick Ugrin



NUMERAL WINNERS

Bernstein Lloyd Craig Madden Crawford Mathewson De Milita Mendenhall (C) Fort Scholtz Johnson, Sam Welton Kurata Whipple Whittaker

MANAGERS Nixon Russell



THE SCORES

Frosh 33, Calif. Prep. 0 Frosh 0, Los Angeles J.C. 19 Frosh 0, Pomona Frosh 7 Frosh 0, Whittier Frosh 27 Frosh 0, La Verne Frosh 6 Frosh 0, Redlands Frosh 26 Frosh 0, Occidental Frosh 6

Layton Stantor

FROSH FOOTBALL

The class of '33 produced a team to be commended for its display of fight and spirit. Although the team ended its hard schedule at a low place in Frosh Conference standing, the players did their utmost in every contest, and caused their opponents some anxious moments before the outcomes were decided.

At the beginning of the season, the prospects of a successful year seemed quite promising. As usual, the majority of the candidates were men who had little or no experience. Four high school lettermen and twelve men who had participated in light-weight football also turned out, although there were a total of fifty players out for practice. From this material Coach Layton Stanton and Line Coach Frank Nickell formed the Freshman team. Coach Stanton deserves a great deal of credit. To install a new system in a large squad is not an easy matter. This is Layton Stanton's third year as Freshman foot-





ball coach, and he is well known to all members of the student body. Frank Nickell, the line coach, was a teammate of Stanton at Tech, and has been very successful in drilling the Frosh line in fundamentals.

The following players have seen the most action on the peagreener team: Captain Mendenhall at fullback has shown his ability to lead and set an example for his men in consistently good playing. Welton and De Milita are two shifty players who found it easy to keep their positions at left and right half. Kurata, Davis, and Madden have all seen action at left end. Lloyd, a short, heavy, powerful player, has played consistently well at right tackle. Andrew, who captured the Institute Alumni Scholarship, a proof that athletics and scholarship mix well, played left guard with Johnson. Craig played at center in every game; he distinguished himself especially in the Oxy game. Bernstein efficiently filled the right guard berth, and played wonderfully throughout the season. Whipple very capably filled the position of right tackle. The work of Meade and Whittaker at right end has been very consistent. Mathewson, Sholtz, and Burke, alternately played at quarter. These were the outstanding players, but the rest of the squad was always out there fighting every minute, and forcing the regulars to do their best in order to keep their positions.

The peagreeners started their season in wonderful fashion by romping on the California Preparatory School eleven to the tune of 33 to 0. Five touchdowns were made, one being the result of a brilliant march down the field. The Tech Babes seemed to gain most of their yardage by line bucks over left tackle. Nineteen first downs were made by the Frosh against two for Cal Prep.

In their second game of the season, the Frosh were the victims of the powerful Los Angeles Junior College team 19-0. The Frosh were considerably weakened by the loss of Mathewson and Sholtz, but managed to hold their powerful opponents to a 6 to 0 count until the fourth period. After blocking the conversion, the Frosh defense stiffened and repelled all onslaughts for the next two quarters. However, the Angels scored twice on a long run and a pass.

The Pomona Frosh managed to defeat the Tech Babes after a hard struggle on the Sagechicks' field by a score of 7 to 0. During the first half the Tech Frosh worked the ball down the field twice, only to lose it on a fumble when near the goal line. The Beaver Frosh made nine first downs to the Sagechicks' one in the first half. Early in the third quarter, the Pomona Frosh took the Tech Babes by surprise when they opened up with a series of end runs and passes which swept the Tech Frosh off their feet, and scored a touchdown. Neither side made any headway the rest of the game. Both teams played well; Bernstein at guard played a wonderful game for Tech.

Although the Tech Frosh fought hard during the entire game, they were no match for the smoothly working Whittier Frosh team, who defeated the Tech Babes by a 27 to 0 score. The Tech Frosh played defensively during the entire game. The La Verne game was heartbreaking for the Frosh; and since by an eleventh hour tally, the La Verne squad won by a 6 to 0 score. Similarly the Frosh were not able to cope with the strong Redlands yearlings and were turned back by a 27-0 score.

The Tech Babes saved their best playing for their last game of the season, that with Oxy; the Tech Freshmen went down to a fighting defeat of 6 to 0, although the outcome was in doubt until the last gun. During the entire first half, and most of the second, the Beavers outplayed the Oxy Frosh but at times the Babes relapsed into their old form and let the Oxy Frosh smash through at will. The center of the line held up very well, with Craig doing some very nice work, but no single man can be given the credit for the stubborn resistance, because every Freshman on the line buckled down and held.

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Bernstein Palm Whipple Spicer Hogan Pickett Mathewson Crawford Madden

De Milita Kurata Craig Fort Moore Johnson, Sam Foster Welton McDonald Andrew Bamberger





Scrub Team

SCRUB FOOTBALL

Throughout each football season and at its close, the students of Cal Tech hear or see very little of the unglorified work of a ball team which endeavors to give to the Institute a well-formed, raringto-go varsity football squad. Our scrub team, with little chance for glory or show, has to put the best of spirit and fight into the daily varsity tussle, in order to turn out a group of football players who have proved by their ability in the game that they deserve the title of varsity. The scrubs consist of varsity ineligibles, graduates, and others not good enough or unable to make the regular team. But, despite this fact, in the annual full length scrap between the Beaver team and themselves, the result indicatd the superiority of the latter when the end of the game found the scrubs winner by a score of 13-0.

This victory would be adequately termed "sweet revenge," inasmuch as the scrub team is always at the bottom of the game when it comes to upsetting the varsity men in their daily plays. The chief function of the scrubs is that of imitating and staging plays and tricks of rival school teams against the Engineers. In this way, the varsity squad is able to train and learn to overcome all possible types of fake passes and trick plays, while the scrub team acts the part of the goat. The scrubs, under the able leadership and guiding hand of Coach Stanton's assistant, H. Z. Musselman, is composed of such fellows as: Ayers, Barnes, Berry, Buffum, Carberry, Cline, Folsom, Giebler, Guhl, Grant, Hall, Kelso, Janssen, Miles, Muff, Mason, Pruden, Watson, and Zipser.

Although the respective merits and feats of each of the above men go unheard and unsung, they receive at the close of the football season recognition from the Student Body in the form of a small "T" with an "S" on it. Some of the more lucky, eligible players are given positions on next year's varsity team.

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BASKETBALL







LETTERMEN Bernhardi (C) Cogen Dickerman Horn Lani McLaughlin Oaks Pratt Strong (M)



LETTERMEN RETURNING NEXT YEAR

> William Cogen Aubrey Horn Leslie Lani James McLaughlin Robert Oaks Lee Pratt

Captain Bernhardi

VARSITY BASKETBALL

The basketball season this year was, for the Engineers, an exceedingly lean one, if one only considers the number of conference victories, or the number of points scored. However, in the matter of spirit displayed by both the team and the student body, the season was as successful as it could be.



PRACTICE GAME SCORES

	Tech
Pasadena	29
Kay's Bakery64	17
Pasadena J. C	21
Pasadena Y.M.C.A33	11
Glendale J. C16	15



PRACTICE GAME SCORES Tech

Kay's Bakery32	22
Shell Oil20	39
Hoover High14	26
U. C. L. A	24
Pasadena J. C	19

Coach Gottschalk

Although the final percentage of games won does not show it, the team put up a very good fight in every game of the season. This was well illustrated in the games with San Diego, Pomona, and the second with Oxy. In the San Diego game, the lead kept changing hands from one team to the other, and it was not until the final whistle that the Aztecs cinched the victory with the narrow lead of three points. In the first game of the season with Pomona, the Sagehens won by the narrow margin of eight points after a most vigorous struggle. And in the final Oxy game, it was only with the greatest difficulty that the powerful Tiger varsity overcame the Beaver's lead at the half, to snatch the victory by a margin of twelve points. On the other hand, the powerful Redlands team, who finally turned out to







Dickerman McLaughlin Bernhardi Liedholm Cogen

be the conference champions, seemed to have but little difficulty in running up rather large scores against the Engineers.

Individually, Lee Pratt, who was elected next year's captain at the end of the season, stood highest in the number of points made, with McLaughlin and Horn following. Bernhardi, Lani, Dickerman, and Cogen were also not unsuccessful in garnering in the points. However, the most impressive thing was not brilliant individual playing but a fine spirit of teamwork of all the members of the squad. It was this fighting teamwork and cooperation that made the Beaver varsity such a hard one to beat.

INDIVIDUAL SCORES

Bernh	aı	°C	11		C	C)	٠	٠	٠	٠	•	•	14
Cogen	L.								÷		,			7
Dicke	m	n	a	n										13
Horn														26
Lani														11
McLa	15	zł	h	iı	n									26
														7
Pratt														69



CONFERENCE SCORES

								A CCII
Pomona .							.42	34
Occidental							.53	30
San Diego								21
Redlands .								16
La Verne							.55	25
Occidental							.50	38
Redlands							.40	11

Captain Elect Pratt

Big

Tech

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POINTS SCORED

Hoffm	a	n				•		•			31
Ingels											1
Moore					,		,				45
Prior											
Robine	et	te	e								18



POINTS SCORED

Bamberge	r	(C)		•	•	•	•	49
Clark		•			*		•		•	6
Craig										
Crawford										27
Foster	•		•	•						23

Coach Musselman

FRESHMAN BASKETBALL

With only one win to their credit out of thirteen games played, the Cal Tech Frosh basketball team went through a rather hard schedule and a hectic season. However, this year's team has fared no worse than other first-year teams, inasmuch as all of the fellows out for this kind of sport are quite "green" and have to be shown and taught the plays of the game.



Crawford Moore Sharpe Bamberger Robinette Hess Hoffman Craig Clarke Ingels Prior Simpson Foster





Under the leadership of Sydney Bamberger, this year's freshman basketball captain, the frosh squad was able to hold up its end of the score in all of its games by doing some fast and accurate basket-shooting. Coach Musselman said that this year's basketball team was by far the best freshman basket-shooting squad with which he has had the pleasure of working. One usually notes the fact that the forwards of a basketball team are tall fellows, but this season has found the reverse the case at Cal Tech. The two regular forwards, Bamberger and Moore, were short men. But this handicap in no wise affected their skill in getting the ball inside of the hoop, for they both ran up high personal scores. Clark, who alternated at left and right forward, came in for his share of the work as a relief forward.

Although the guards of the Freshman team worked mighty hard in stemming their opponent's scoring ability, Coach Musselman was forced to shift his men around in different positions at guard, and also, he had to place Prior, a promising forward, into the guard position. The other guards who played consistently good basketball were: Foster, Robinette, Ingels, and Craig. At center, Hoffman played a stellar game, but was forced out at the height of the season by a "charley horse" and surrendered his place on the team to Crawford, who continued to uphold the standard set by Hoffman and was able to run up an excellent personal point score. The two managers, Palm and Palmer, worked very hard and did their best to help make the frosh basketball season successful, but the fates were hard this season and ruled otherwise. Nevertheless, the work of these two managers has entitled them to numerals, along with the other members of the team.

Playing their first conference game against the Pomona frosh, our men had the game cinched up to within thirty seconds of the final whistle, when the "Sagechicks" forged ahead to win by the narrow margin of 29-24. This struggle was the best and closest game on the frosh schedule. Both the Occidental and Redlands teams swamped our frosh by scores of 47-21 and 55-14 respectively. As a result of these defeats, the close of the season found our freshmen team occupying the cellar position in the freshman basketball conference standing. Despite these results it can be truly said that the frosh did not get the breaks, and the fact remains that they worked hard throughout the season.



Freshman Squad




TRACK





TRACK SCHEDULE

March 1—Whittier at Tech March 8—Tech at Oxy March 15—San Diego at Tech March 22—U.C.L.A. at Tech April 5—Tech at Pomona April 12—Tech at Redlands April 19—Conference at Pomona



DUAL MEET STANDING

w	on Lost	Pct.
Oxy	3 0	1.000
San Diego	3 1	.750
Pomona	2 1	.667
Tech	2 2	.500
Redlands	0 2	.000
Whittier	0 2	.000
		14

Captain Ayres

VARSITY TRACK

Led by the fleet spikes of Captain Walt Ayres, the Engineer cinder artists enjoyed a fairly successful season. Captain Ayres headed the list of sprinters and broad jumpers throughout the season. During his Freshman and Sophomore years he was a big point collector for the team, but in his Junior year he was laid up most of the time with injuries. In his last year he displayed a great fighting spirit and ability which makes him worthy of being captain.



Graff Jones Holzman Dickey Skoog Simpkinson Downs

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REDLANDS TRACK MEET SCORES

- 100 yards—Graf (T), Wearne (R), Ayres (T), 10.2s.
- 220 yards—Freeman (T), Wearne (R), Graf (T), 22.6s.
- 440 yards—Zahn (T), Loper (R), Brown (R), 52.6s.
- 880 yards—Taylor (R), Downs (T), Kleinbach (T), 2:4.2.
- Mile—Skoog (T), Taylor (R), Everton (R), 4m 36.2s.
- Two Mile—Miller (R), Skoog (T), Smith (T), 10m 33.2s.
- High Hurdles—Beatty (R), Dickey (T), Smith (R), 16.0s.
- Low Hurdles—Beatty (R), Dickey (T), Smith (R), 25.2s.



REDLANDS TRACK MEET SCORES

- High Jump—Fox and Goodyear (R), Hayes, Cogen and Simpkinson (T). Tied for first, 5 ft. 7 in.
- Hammer—Alderman (T), Holzman (T), Anger (R), 123 ft. 4 in.
- Shot Put—Shuler (T), Simpkinson (T), Stacy (R), 39 ft. 3.5 in.
- Pole Vault—Jones (T), Fox (R) and Anderson (T), 12 ft.
- Broad Jump—Ayres (T), Fox (R), Barton (T), 20 ft. 10 in.
- Discus—Smith (R), Van Reed (T), Peer (T), 113 ft. 7 in.

Javelin—Watson (T), Keele (R), Mathews (T), 173 ft. .75 in. Relay—Redlands, 3m 31.4s.

Coach Stanton

The Interclass track meet officially opened the track season. This meet, won by the Sophomores, gave the tracksters their first competition of the season. The Whittier Poets were the Engineers' first conference victims, the final score being $100\frac{1}{2}$ to $39\frac{1}{2}$. In this meet Dickey, Skoog and Shuler were the leading scorers. George of Whittier easily copped the dashes, while the Engineers showed great strength in all the field events.

The Engineers were defeated by the Championship Occidental team in a very exciting contest. Skoog, Tech's leather lunged distance man, won a fast mile from Crawford of Oxy; and he also claimed a victory in the two mile. The Beavers were defeated in a close meet by the highly touted U. C. L. A.





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CIT

Varsity Squad

tracksters. Shuler took a few places in the weight events, while Watson uncorked a mighty heave of 182 ft. $5_{3/4}$ in. to win the javelin. Skoog ran a fast mile, 4m. 32.6s., to nose out Smith of U. C. L. A. in a close finish.

Returning from a week's vacation, following the second term, the Engineers were handed a sound beating by the Pomona Sagehens. The day found the mercury hovering around the 100 degree mark, making the track meet a very warm affair. No fast times or thrilling races presented themselves during the meet. In their last dual meet of the season, the Engineers defeated Redlands University by an 80 2/5 to 59 3/5 score. The feature race of the day was the mile, with Skoog nosing out Taylor of Redlands in a fast race. Skoog's record for the mile in dual meets remained unblemished throughout the season. Whenever the occasion called for a hard struggle he was ready to turn in a victory. Skoog's fame as a two-miler is also well known. Captain Ayres took his usual first in the broad jump and a place in the hundred. Watson defeated Keele of Redlands in the javelin, by the close margin of 3/4 in. Ossie Zahn ran a beautiful four-forty to win in 52 2/5 secs. At the first of the season Zahn was only capable of running the four-forty in 54 seconds; however, he managed to cut two seconds off. his early season time. Graff and Freeman took firsts in the century and furlong respectively.

The Southern Conference meet, held at Pomona College, was an exciting contest. The Championship Occidental team carried off all laurels by easily winning the meet, with Pomona and San Diego closely following. The Engineers took a lower place with Skoog, Ayres, and Zahn showing well.

Any successes of this year's track team have been brought about by the able coaching and work of "Fox" Stanton. His track teams are always made up of green material who, under his guidance, become good athletes. A summary of the track season shows steady improvement by all the members of the squad; and the loss of Captain Ayres, Downs, Kleinbach, Alderman, Carberry, Mason and Zahn will be keenly felt next year.

FRESHMAN TRACK

The opening of this year's track season found thirty-five men aspiring for the positions on the Freshman track squad. After about a week's practice the annual Frosh track meet, which usually gives a good indication of the possibilities of the Freshman team, disclosed some good performances. In this meet Downie, besides taking firsts in all the weight events and the javelin, broke the Frosh shot record with a heave of thirty-seven feet six inches. Goss won the mile and the half in very good time for that early in the season. Neither hurdle event was won in fast time, the Frosh showing the usual lack of men in these events.

The Frosh lost to the strong South Pasadena team in their first meet of the season. The track team received a severe blow in this meet through the loss of Goss, star 440 and 880 man. Although Goss won his events in this meet, he strained his heart and was barred from further competition by the Doctor's orders.

Taking five firsts, the Tech Frosh were impressive though handed the short end of the score in their track meet with El Monte high school. Osborne, who had been recovering from a severe cold since the beginning of the season, was high point man for Tech, taking two firsts in the 880 and mile. Downie took his usual first in the shot. Widess and Matson also took first in the broad jump and discus respectively. The weakness of the Frosh in the hurdles was evident, but they presented a strong field against El Monte in the other events.

The next week the Frosh were badly beaten by the powerful Lincoln High track squad. With a small army of men they took $81\frac{1}{2}$ points while the yearlings were taking $22\frac{1}{2}$. Widess, the high point man for Tech, took two firsts in the hundred yard dash and the broad jump. The only other Tech man to score a first was Downie who took his usual first in the shot with a throw of 43 ft. $7\frac{1}{2}$ in.







In the Interclass meet, the Freshmen took third place with $32\frac{1}{2}$ points. The Freshmen did their share in winning firsts in three events. Doolittle took the high jump at five seven, Widess the broad jump at 20 ft. 1 in., while Osborne gave the crowd a thrill by coming up to win the half mile. Downie again broke the Freshman shot record, setting the weight out 39 feet $\frac{1}{2}$ in.

The poorly balanced Whittier Frosh team took a trouncing at the hands of the Tech babes. However, it must be taken into consideration that Whittier had only six men to collect their 37 points in the score of 103 to 37, but those six men were good and took five first places. Doolittle was high point man for Tech competing in three events and chalking up a total of 13 digits; close behind him was Downie who took firsts in the discus and shot and pushed his own record a little further out in the latter event. Times and distances would have been much better had the Tech men been pushed, but in four events the yearlings took clean sweeps and altogether they took ten first places.

In a meet characterized by poor times and distances the Tech Frosh were defeated by the Occidental yearlings to the tune of 87 5/6 to 52 1/6. The Tech Frosh collected their points in the distances and some of the weight events, while the Tiger Babes carried off the dashes, hurdles, and field events. The Beaver Babes were handicapped by the loss of Doolittle, star sprint man and high jumper, who was out with injuries.

The Frosh lost two meets, one with Citrus J. C. and one with the San Diego Military Academy by very close scores. The meet with San Diego produced some very good performances in the sprints and in the mile run. Osborne came close to breaking the Frosh record in this event. They were able to defeat the Redlands Frosh by a score of 71 to 69.

The team roster includes: Doolittle, Widess, Lindeborg, sprints; Fort, Davis, Perrine, Mathewson, Johnson, Carleton, hurdles; Spicer and de Milita, pole vault; Downie, Bernstein, Welton and Lloyd, weights; Doolittle, Margiot, Davis, Prior, Detmers, Widess and de Milita, jumps; Osborne (captain), Morgan, Mersman, Kennedy, Poulson, Mead, Brown, Goss, and Pipes distances.



Freshman Track



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BASEBALL



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April 12-Oxy at Tech April 19-Tech at Whittier April 26-Tech at Pomona May 3-Whittier at Tech May 10-LaVerne at Tech May 17-Tech at Oxy May 24—Tech at Redlands



RETURNING LETTERMEN

Captain Boyle Dickerman Futcher Green Hillman Pritchett Towler Wineland

Captain Boyle

VARSITY BASEBALL

This year the baseball team had a very successful season under the leadership of Captain Les Boyle. As captain of the football team Les was known to all fans as a great player, and he excels on the diamond to an equal degree. Being captain of two major sport teams in the same year is quite a feat, yet Les has successfully carried out this condition. His playing has marked him as a great baseball player, while his versatility on the diamond has been very useful to the team. His batting has made him a man to be feared by all the conference pitchers, and his fielding has been one of the highlights of the season.



McMillan

Futcher

Hillman

Green



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OCCIDENTAL GAME LINE-UP CAL TECH

Pritchett, Catcher Towler, Center Field Boyle, Third Base Wineland, Pitcher McMillan, First Base Dickerman, Second Base Futcher, Left Field Scharf, Short Stop Hillman, Right Field



THE SQUAD

Captain Boyle Bell Cordes Dickerman Futcher Green Hacker Hall Hegardt Hillman Iwasaki Koehm Labory McMillan Merrithew Pratt Pritchett Scharf Towler Tutschulte Wheeler Wineland

Coach Musselman

Boyle's playing ability alone, however, has not won for him the captaincy of two major sport teams in the same year. Throughout his college career he has displayed rare qualities of leadership and sportsmanship which are so essential to the true competitive athlete. On innumerable occasions Les has shown that he possesses a fighting heart which is the pride and joy of his coaches.

Coach Musselman was greeted by a squad of about twenty-five men at the first call of the season. Many positions were left open by the graduation of Cramer, O'Haver, Reed, Muff, and Sinram, but these vacancies were soon filled by very competent men. This year Dickerman and Wineland, lettermen, returned to school and their playing greatly aided the team. Wineland's consistent pitching





CIT



The Squad

throughout the season turned in many victories, while Dickerman's presence on second base added strength to the team. Musselman built his team around the returning lettermen: Captain Boyle, Pritchett, Hillman, Towler, Green, and Futcher; and the second team players filled in many odd positions. Muff and Reed, winners of the Rawlings Trophy last year, acted as assistant coaches. With the help of these two men, Musselman built up a fine team early in the season.

The team this year had a very efficient and smooth working infield. Pritchett, catcher; Wineland and Hillman, pitchers; provided a strong battery in every game. McMillan, first base; Dickerman, second base; Scharf, third; and Captain Boyle, short stop; proved to be a winning combination most of the season. The outer garden was well taken care of by Futcher, Towler, Green, and at times Hillman or Wineland. Cordes, Tutschulte, Bell, Hall, and Pratt showed up well as second string men. Many other men were on the squad and they will probably come to the front on next year's team.

Throughout the conference interest in baseball is lagging. San Diego State dropped out completely and if the rest of the conference is to keep baseball as an intercollegiate major sport, the student body support will have to be more noticeable. Tech's baseball teams always upset champions, making their existence well worth while. The Engineers started the season off right, this year, by winning the greater part of their practice games. Pasadena Junior College fell victim before the Tech onslaught three times in pre-season games. Out of eleven major practice games played Tech won eight, proving that they are a capable group of baseball players. Some of the victims included Glendale Junior College, Pomona Junior College, Fullerton Junior College, and Glendale high school. Santa Ana Junior College, L. A. A. C., and California Christian College were the only victors over the fighting Engineers. In the first conference game, that with Oxy, Tech was turned back by the effective pitching of De Hoag by a 10 to 4 score.

FRESHMAN BASEBALL

From the looks of the number of freshmen out for the Frosh baseball team and the snap and speed of their ball playing, a successful season is to be expected from them. With about twenty men out for this sport, Coach Layton Stanton and his assistant, Gottschalk, have had little difficulty in placing the men in berths on the team. The two most promising hurlers of the group are Dick Russell and Merrill Berkley, and these two will undoubtedly pitch most of the games. Russell, who is a south-paw, pitches a fast hooked ball, and it is upon him that the hopes of the freshman ball team are pinned. Pitching a speedy straight ball, Berkley, a right-hander, is sure to be seen in action a great number of times.

At the receiving end of the pitched balls will be found Greg Hartman and Chris Prior, who can hold down everything from a fouled ball to a wild pitch. Alternating behind the plate, both of these players are sure to do their share towards the winning of a game. Although the other positions in the infield and outfield are uncertain, it is safe to assume that the following men will hold down the positions assigned to them. First base will find Stewart on the job as head putout man, while both Wright and Hoffman will try for second base. Fast and tall, these players can handle hot grounders and short flies with ease and precision.

At short-stop, Craig is the ideal man, since scooping up low, fast balls is his specialty. Both Judson and Spade will endeavor to stop plays and hits coming their way at third base. Of the others out, Byrne will cinch a place on the team at left or center field, since he is the fastest man on the squad. Those who have not been mentioned but whose good work has been consistent and merits recognition are: Clark, MacKaye, Pierson, and Spicer, who will alternate with the men in the positions assigned them.

At bat, the frosh will be expected to shine out against opposing twirlers, if the pre-season hitting ability of the men is to hold out. With only a few strike-outs, and a number of safe hits, the freshman baseball squad looks bright and will undoubtedly do a great deal towards getting to the top in the baseball conference schedule.





Batter Up!

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One of the hardest jobs on the team is that of manager, and the frosh baseball team has been lucky enough to get two conscientious, hard-working freshmen, Simpson and Monning, who have seen to it that the members of the team have been kept on the jump at practice. Their's is a tough job: chasing balls and hitting flies to fielders, but their reward will be sweet and rich at the close of the season when they are both given their numerals. Coach Layton Stanton may well be proud of his team and much credit is due to him and Gottschalk for bringing the players into proper form. Whether or not their work in putting a team on the diamond will result in a greater number of wins than defeats is of little consequence, in as much as it is also their duty to instill into the minds of the men that the game should be played because it is a game and the defeated engineer continues to smile.

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Since few men come to Tech with much experience in baseball, it is very 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 obviously not made up of stars has men on it which will unquestionably prove valuable cogs in Tech baseball teams of the future.

Perhaps the largest turnout ever made for a freshman baseball squad was witnessed this year, and it compares favorably with the fine spirit and cooperation shown by the football, basketball, and track squads produced by the class of 1933.

Unfortunately it was impossible for the Big T to indicate the games played by the frosh baseball squad this year since the team was organized only a few weeks before the final copy for the book was sent to be printed, and so it is with a certain degree of chagrin that we must present to our readers a rather sketchy and none too definite resume of the freshman baseball season this year.

Tech, however, looks with pride upon its freshman baseball squad and throughout the season has watched it with eagle eye thereby observing that quality of true Tech sportsmanship which is far more important than the winning of any one game.



Frosh Squad







MINOR SPORTS



VARSITY TENNIS

Early in February an elimination tournament was held, in which about twenty-five men were entered. Those eight men who were successful in reaching the third round, formed the tennis squad. One bright Saturday afternoon these men played a round robin and thereby obtained a ranking.

At this point a new feature occurred in Tech tennis history. It was announced that we were to have a coach, a Mr. Welch, professional at the Hotel Huntington. Due to some change in his position he had to withdraw as coach before he was ever seen on the courts of Tournament Park. Our hopes, that had been so rudely shattered were quickly revived for Coach Musselman was right on the job and obtained for us as Coach Mr. Robert Allen of the Los Angeles Tennis Club. He took over his duties on March fourth and has been of inestimable value in developing a relatively strong and successful tennis team.

The material this year was very green. Scott who fills the position of tennis manager was the only returning letterman. Our Captain is Howard Cary, who last year showed great promise, but then was fortunate enough to go abroad as travel prize winner and so missed the season. This year Cary took the lead at the start of the season but did not hold it for long as Behlow won and has since held the coveted first place. The tennis squad was composed of L. Behlow, R. Carey, H. Cary, T. Anderson, J. Hamilton, F. Scott, E. Trostel, A. Atwood, and E. Arnold. The first five men have done most of the playing throughout the season, the others merely warming the benches.

Coach Allen had barely become acquainted with the men when on March 8 we met the S. C. Dental College team in a practice match. The Dentists pulled out all the honors and the Tech squad looked rather weak by comparison. Because of a pouring rain the next week the match with Pomona was postponed, but on the next Saturday our netters met the strong Oxy squad only to be defeated by the close score of 5-4. Behlow and Howard Cary were the stars in this match, each winning their singles and together garnering a victory in the doubles. The next week Tech was able to defeat Red-lands by the decisive score of 8-1, losing only one match during the whole afternoon. The rest of the season was highly successful for the Tech netters and high hopes are held for an even better team next year.



Varsity Tennis Squad



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Varsity Swimming Squad

VARSITY SWIMMING

Despite the loss of most of the outstanding men of last year's championship squad, the Tech swimming team has made a good showing this year. The men have worked hard under the leadership of Captain John Shields, and with the help of Mrs. Allen of the Pasadena Athletic Club made remarkable progress from a rather poor start.

Captain Shields undertook the task of filling up the hole in the dives left by the graduation of Dunham and Keeling. He proved himself to be an all around man by his superiority in both the dives and the breast stroke. This is remarkable because Captain Shields had done no diving previous to this year.

Howard Smits is another diver who developed a great deal during the season. Howard was closely pressing Shields in this event and will be back next year. The team felt keenly the loss of "Dashy" Bode, last year's Captain, in the distance events this year. Norman Gunderson developed good form in the 220 yd. freestyle and was cutting down his time in this event as the season went on. Gunderson also took over the back stroke event, proving to be a strong competitor in all the meets in this event. George Rice filled up the hole in the 440 yd. freestyle in a way which should make him a strong competitor in the conference next year. The sprint events were ably taken over by Jan Shaafsma who consistently placed at the top in the practice meets. Shaafsma will be one of the mainstays on the team for the next two years. Orrin Elliot ably assisted Captain John Shields in the breast stroke, and Winton Hoch filled out in the sprint events.

The team lost its first two meets with the San Bernardino Y. M. C. A. and the Glendale Junior College, but showed the makings of a good squad. Tech has won the Conference swimming title more times than any other college. The men worked hard this year to keep up the record of the last two teams which have won the conference. At the middle of the season the men showed possibilities that will make the team a strong contender in the Conference Meet at Mission Beach this year. We are unfortunate in not being able to publish the results of this meet which may again find Tech on the top of the heap, but it was found impossible to hold up the printing of the book for this purpose.





FENCING

Fencing is rapidly gaining a place as one of the most prominent of minor sports. About 15 men joined the Fencing Club and enjoyed the sport throughout the year. The fencing team was composed of Blohm, Brasher, Shockley, Tarbet, and Webber. As there has not yet been a conference formed in the local colleges, most of the matches were held under the auspices of the Amateur Fencer's League of America. In these meets Cal Tech fencers have taken more than their share of the prizes by placing in every meet thus far entered. Clyde Blohm began the season by taking second place in the Prep Foils. Later in the Novice Foils Tarbet and Blohm placed second and third respectively. Webber, a Frosh who is very clever with the blade, annexed second place in the Junior Foils. Besides these individual bouts there have been arranged encounters with U. C. L. A. and P. J. C. where the men work in a team.

CROSS COUNTRY

Cross country proved as ever one of the most popular minor sports this year. As many as seventy men were entered in some of the interclass meets. Two main events were held during the season, a meet with U. C. L. A. and the conference meet. Much of the early season practice was obtained by the men through interclass meets. A number of these were held, in fact one was held over the two mile, one over the three mile, and one over the four mile course.

The meet with U. C. L. A. was won by Smith of U. C. L. A., Skoog of Tech was second, while Smith and Kleinbach of Tech came in fifth and sixth respectively. The final score of the meet was U. C. L. A. 24 and Tech 31. On December 7th the team went to Indian Hill near Pomona and there placed second in the conference meet. This was an excellent showing for Tech. Skoog as usual was Tech's best bet and placed fourth in the meet, while Bob Smith came in for a close fifth. The final score of the conference meet was Pomona 36, Tech 44, Redlands 47. The following men received letters: Skoog, R. Smith, Pickering, Kleinbach, Chambers, Downs, Detweiler, and Cromley.



Freshman Tennis Squad



Freshman Swimming Squad

FRESHMAN MINOR SPORTS

Though attention was concentrated more on the major sports, this year's Freshmen have been more than usually successful in minor sports, and though not all of these sports were represented by teams, the turnouts were very good.

Cross country brought a turnout of about forty, and most of the men stayed with it throughout the season. The ten man team showed up well in preliminary meets with local high schools, and in the series of interclass runs, the last of which they won, Osborn taking first place. Though defeated by the U. C. L. A. team, the frosh came back to win the Conference meet at Pomona. The performances of Goss, Osborne, Pipes, Johnson, Coryell, Lewis and Morgan were especially good.

Tennis was another sport which enjoyed a large turnout, and was perhaps the most popular Freshman sport. The team, composed of Grimes, Sullwold, Fletcher, Wheeler, and Nelson was notably successful, their best performance being given in defeating the strong Oxy Frosh 5-4, after a hard fight. The large turnout and the hard battles for places on the team, assures Tech of plenty of material for teams of future years. Great credit is due to the coach, Mr. Robert Allen, and to the manager, L. Hallinger.

Swimming was also popular, but there was not a large consistent turnout because the team was forced to practice in Pasadena. However, the Frosh showed up very well in the interclass meet, in which McCleary, Newcombe, and Burk showed up especially well. In intramural boxing and wrestling, the Frosh were also well represented, the class tying for first place in wrestling. Though these sports are solely intramural, the bouts excited plenty of interest. The work of Lentz, Spade, Mendenhall, Byrne, Barlow, Johnson, Bowers and Smallman in these sports was especially good.

In addition to these, handball, golf and fencing were more or less popular, the handball tournaments exciting much interest. Johnny Weber, the one-man fencing team, made quite a name for himself as one of the best fencers in Southern California. So as a whole the Freshman minor sports teams of 1930 were quite successful.





NEOLITHIC MAN

The next stage of culture achieved after the Cro-Magnons is illustrated by men of the Neolithic or New Stone Age. Their physical advances over their immediate predecessors is not so marked as their mental progress and manual dexterity. The stone implements which were formerly flaked were now polished and carefully executed. The Age of Metals, Copper, Bronze and Iron which follow the Neolithic Age show a progressive craftsmanship and dominance of mind over matter. The men of the New Stone Age represent a still further development in their manifestation of the gregarious instinct. The organized communal life of the Swiss lake dwellers is an example of this __social_evolution.__



BOOK IV ACTIVITIES



PUBLICATIONS

9-19



CIT



F. S. Scott Editor

L. L. Ferguson Business Manager

THE BIG T

The annual must speak for itself; no amount of publicity or advertisement will cover defects in makeup and organization. That the annual will be a well finished, properly managed production is taken for granted, but the slightest errors are held inexcusable. The annual must be a worthy representative of the organization that produces it. However, this year's book has succeeded remarkably well in its purpose; that is, of presenting an accurate cross-section of Institute life.

Though handicapped by the lack of a large body of subscribers, the Tech year book has always been distinctive. The staff of the 1929 annual introduced the idea of large sized pages which has been followed by this year's staff. This 1930 annual with its larger number of pages and new departments, has been planned on a more ambitious scale than any of those of previous years. The theme, the result of much careful planning, is the special pride of the Editor while the unusually complete athletic section is one of the outstanding features. New schemes of color and design give an unusual effect.

Many of these innovations and improvements have been made directly possible by the large number of advertisements handled by the business management. This year's annual has been particularly fortunate in not losing any of its staff, though it was necessary to elect a business manager at the first of the year to take the place of Bert Miller. Lawrence Ferguson was elected, and served to the end of the year. January brought the usual difficulties in securing subscriptions from a not over enthusiastic student body, but the necessary number were eventually sold, leaving only the work of "dummying" to occupy the staff; though this involves difficulties which few realize.

Much might be written of the difficulties of publishing the "Big T." The most important, however, is a matter of raising sufficient money to allow the annual to be self-supporting, without charging an extraordinary price for the individual copies. In endeavoring to keep the standard of quality that has been maintained in the previous year books, it has been necessary to use the best of workmanship and the greatest of care.

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Wilkinson (Classes Editor)

Pipes (Athletics) Goodman (Reporter) Amann (Circulation) Hoeppel (Photo Editor) Hall (Debate) de Camp (Humor) Elliott (Art) Gaylord (Sports Editor)

Clark (Make-up Editor) Atwood (Photos) Johnston (Art) Jecker (Reporter)

Cromley (Administration Editor) Carberry (Snaps) Berkeley (Reporter) Dickerman (Ads)



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R. I. Stirton Editor

E. C. Hillman Business Manager

THE CALIFORNIA TECH

The California Tech, the weekly newspaper of the Associated Student Body, under the able leadership of Robert I. Stirton, editor, has just passed through another successful year. No changes were inaugurated in the size of the paper this year and it remained a six-column, four-page paper.

This year was marked by a change in the editor's term of office. The new plan is to elect and install the editor at the end of the second school term of the year. At the elections held at the end of the second term Jack Hatcher was elected editor, which position he will hold until the end of the second term next year.

The two customary special editions of the paper, the Football and Exhibit Day Issues, were again great successes. The Football Issue, edited by Robert I. Stirton and containing eight pages, appeared during the first term and was distributed at the football banquet immediately following the termination of the football season. A complete review of all the games of the season was given, and also writeups of each player on the team. Photographs of the players were included, besides statements from the coach and full details of the banquet. The second special edition of the year was the occasion of the annual Exhibit Day, April 11-12. This was another eight-page copy, edited this time by Jack Hatcher, emphasizing the building program of the coming year. Six thousand copies of the Exhibit Day Issue were distributed to the numerous visitors.

Much credit for the success of the paper must be given to the Tech Staff, which worked hard and ably, and, as we have said before, under such great difficulties. Particular attention must be paid to Jack Hatcher, who, under Robert I. Stirton, held the position of managing editor, and later that of editor. Mention must also be made of Lee T. Carleton, assistant managing editor, Duroc Jecker, copy reader, and others whom it is impossible to list here, but who were not found lacking. The business end of the publication was upheld by Ernest C. Hillman, business manager, and his assistants. Their's was the task of rounding up advertising matter, making up the advertising space, and mailing paper to off-campus subscribers. At the student body elections Henry Pownall was elected business manager.

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(News Editor) Clark (Features) Jones (Reporter) Pipes (Reporter) Voak (Reporter) Gaylord (Features) Jecker (Copy Editor) Wilson (Reporter) Berkley (Reporter) Poulson

(Reporter) Poulson (Reporter) Wilkinson (Columnist) Bechtold (Asst. Editor)

Scott (Reporter) Ransome (Reporter) Grafman (Sport Editor) Shields (Reporter) Koehm (Collections) Kent (Circulation) Downs (Reporter)

Ellis (Reporter) Crane (Exchanges) Ferguson (Reporter) Cline (Circulation Mgr.) Adams (Reporter)

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Cline

Hacker

Smits

Bates

PUBLICITY STAFF

One of the most important of the groups of men working on the campus is the Publicity Committee. These men have the somewhat thankless job of keeping the name and achievements of Cal Tech and Tech men in a favorable light before the general public. They place all available news at the disposal of the local papers, other college papers and certain periodicals throughout the country. During the past year there have been great developments at Tech and it has been part of the work of the Publicity Committee to keep the world informed of these new developments.

The past year this work has been carried on by a committee composed of Howard Smits, chairman, Charles Stipp, Barker Bates and Joe Cline. Perhaps the largest single job which they had to accomplish this year was the publication and distribution of the Football Programs for all the Conference games. With the compilation of the advertising and the subject matter, including the names, numbers and photographs of all the players this was a job of no small calibre

Another of the phases of their work which directly touches us at Tech was the maintenance of a very satisfactory Press Bulletin Board in lower Throop. This board brought out many items of interest to Tech men that would otherwise have gone unnoticed.

A very important field of publicity work which was handled this year by Bill Hacker, is the Exhibit Day publicity. In order that the public at large may know about Exhibit Day it is necessary that much material be furnished to the metropolitan newspapers. It was also necessary to send Exhibit Day material to all of the high schools in Southern California.

At the end of the second term Charles Stipp was elected Publicity Manager for the following year and took office at the beginning of the third term. Mr. Stipp and his committee composed of L. L. Ferguson, A. Jack Grafman and James Bradburn very ably carried on the work started by Mr. Smits and his committee during the first two terms.

In the third term the most important work of the Publicity Committee was on the Cal Tech quarterly, an administration bulletin published during the third term by the students. This issue of the bulletin contained a great fund of knowledge about Cal Tech in general and about the new buildings being erected in particular. The composition of this booklet occupied the energies of several men not on the committee as well as those regular members. This booklet was to be sent to all these friends of the Institute who are interested in the present and future development of Tech.





MUSIC



CIT



BAND

Beginning the year under a great handicap caused by a woeful lack of instruments, the Cal Tech Band has done remarkably well this past year. With the passing of the military department the band lost many of its instruments, accordingly the school purchased a number of new horns.

The band has played for all major student activities this year, giving their services willingly and frequently. Their presence at the football games has aided the spirit of the team and rooters. With their new uniforms, they made a striking appearance, especially parading between halves of the games. The Oxy rally would have been a dull affair without the band; while their presence at the Stanford send-off, filled the occasion with pep and good spirit. Several programs were given at student body assemblies, and a concert was given at a Monday Assembly which was well received by the students.

Randal Maass, student director, who took over the task of organizing and building up the band deserves credit for the work and time he gave to the cause.

Tech's band has not only been present at student activities this year, but it has played for many outside functions; the annual Pasadena Tournament of Roses being one of the feature parades of the year. Also the band has played on several occasions for the Flintridge Riding Club.

ROSTER

CORNETS: Randal Maass, John Detweiler, Ben Haynes, Henry Pownall

- CLARINETS: George Taylor, Stephen Dorman, John Sharp, Lawrence Hallinger
- SAXOPHONES: Leslie Lani, Hunter Nicholson, Robert Pelzel

BARITONE: Warren Smith

BASSOON: Emmette Holman

TROMBONES: John Mehl, Ted Mitchell, Emmer Arnold

ALTO: Thomas Tarbet

BASSES: Bert Coupland, Dixon Oulton, Sture Persson

DRUMS: Deane Carberry, William Saylor



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ORCHESTRA

Cal Tech maintains a musical organization of the highest type in its capable orchestra which has passed another successful year under the direction of Reginald Bland. Unfortunately, these musicianscientists have presented only one public recital this year.

The only concert was given in Dabney Lounge on the afternoon of February 25, and featured music from the current light opera, "The New Moon," together with several other melodious selections in an hour's recital. The program was well attended and was highly enjoyed by both the players and the audience.

Management of the group this year has been in the able hands of Joseph Foladare, president; Horace R. Crane, manager; and Charles Springsholz, librarian.

The rehearsals have been held weekly throughout the year. The work has been performed with enthusiasm by the members of the orchestra, who have found enjoyment as well as interest in their struggles with the difficulties of rhythm, harmony, coordination, and such technical difficulties as beset the symphonist's path. Reginald Bland, the conductor, an outstanding musician and the conductor of the Pasadena Civic Orchestra, has directed this activity at Cal Tech since 1926.

ROSTER

VIOLINS: Horace R. Crane, Fred R. Groch, E. R. Holman, S. H. Persson, Harold E. Pearson.

BASS: Reginald Bland, Thomas D. Oulton

CLARINET: Stephen C. Dorman, Lawrence W. Bolles

FLUTE: Raymond A. Peterson, James F. Bonner TRUMPET: John S. Detweiler, Randel Maass CELLO: Clinton E. Gates OBOE: Lyman G. Bonner TROMBONE: Gordon S. Mitchell PERCUSSION: Henry H. Bruderlin BASSOON: George H. Pickett HORN: Laurence K. Gould PIANO: Joseph Foladare





GLEE CLUB

The Glee Club of 1930 has been one of the most successful of Institute history. Not only has the Club appeared at the customary local functions, but it has traveled to other colleges and sung before neighboring high schools. Its notable success should discredit the idea that Tech men find no time for extra-curricular activities.

Much credit for the organization of this year's club is due to Mr. Allen R. Carpenter, whose perseverance and thoroughness are largely responsible for its success. Incoming Freshmen swelled the membership to over forty, though many had little experience in Glee Club work. However, a few weeks of practice under Mr. Carpenter accomplished some surprising results; and the first concert, given before the sponsors of the Institute, was a complete success.

The Broadoaks program, followed by a short informal dance, was enjoyed by both the Club and the Broadoaks girls. Another exchange program took the Club over to Oxy, where the Tech Glee Club is always popular. Following this, the Club gave a concert at Narbonne High School; afterwards they enjoyed a swim at the Surf and Sand Club. The Club next sang before the Pasadena Masonic Lodge. Here they also received a wonderful reception, and in turn entertained the Masons with a Tech yell. As a whole, the year was a most successful one.

Next year should be quite an eventful one for the Glee Club, with a substantial number of this year's members returning. However, the Institute owes much to the Club of 1930 under president Jack McGarry; and is grateful for the work of Clyde Blohm, manager, Robert Smith, Librarian and Alvin Smith, Accompanist. The members are: Emmer Arnold, Thomas Anderson, Barker Bates, Millard Barton, Sidney Bamberger, Edward Crossman, William Cogen, Sol Cogen, David Cook, Frank Crawford, Orrin Elliot, Martin Feely, Lawrence Ferguson, Fred Groch, Clark Goodman, Sylvester Giddings, Emmette Holman, Roland Hawes, Karl Hegardt, Winton Hock, Stanley Johnson, Byron Johnson, James Love, Ernest Levine, Campbell Nelson, Harold Pearson, Bruce Rule, George Rice, Nicolai Skaredoff, Robert Smallman, Howard Smits, Michael Silverman, Merrill Tucker, Thomas Tarbet, Nico Van Wingen, Lewis Wyatt, and Richard Waterhouse.





FORENSICS



CIT

VARSITY DEBATE

"A democracy is governed by its talkers."—So at Tech debating has become one of the most important extra-curricular activities. Each year sees a larger group of men taking advantage of the exceptional opportunities offered by forensics in the field of public speaking. Because of the benefits derived by men engaging in this work, it has the strong support of the faculty and is held as a valuable part of the training received by students at Tech which will fit them more fully for a successful career in the field of engineering and science. Instruction in debating and public speaking is under the capable direction of Mr. Ray Untereiner and the success of Tech in forensics is in a large part due to his instruction and coaching.

As a member of the Southern California Public Speaking conference composed of Redlands, Pomona, Whittier, Cal Tech, La Verne, and Occidental, Tech his this year made a very remarkable record in both oratory and extempore, Robert Sharp winning the Old Line Oratorical contest with his oration, "The Patriotism of Peace" and Francis Hutchinson taking second place in the conference extempore contest with "Coeducation" as his topic.

After a closely contested tournament and elimination contest among the debate squad, Francis Hutchinson and Robert Sharp were selected to represent Tech at the bi-annual convention of Pi Kappa Delta, national honor forensic society, which was held at Wichita, Kansas. These two men formed a very brilliant and capable team and their ability was proved by the fact that they defeated Southwestern and the University of Oregon at Tech and on their way East they defeated the College of the Pacific at Stockton, California, and Brigham Young University at Provo, Utah

On this trip they were accompanied by Mr. Untereiner and Ray Cromley who represented Tech at the convention in the extempore contest. At the convention the Tech delegates made a splendid



Amann

Kircher

showing in competition with representatives from schools throughout the country. Out of over one hundred debate teams entered in the debate contest the Tech team ranked in the first twelve. It was not until the fifth round of debates that they were defeated and their elimination was due to the school which finally won the national cup. In the third round of the four rounds of extempore Cromley was forced out of the contest by taking second place in his group to the National champion of 1928.

The debate season opened with a non-decision debate with Pacific University of Forest Grove, Oregon. Francis Hutchinson and Ray Cromley upheld the affirmative of the Pi Kappa Delta Question with such good presentation and logic that the visitors from Oregon were forced to extend themselves in order not to be overwhelmed by the skillful argument of the affirmative.

On February 6th, Tech held a dual debate with Pasadena College, our closest neighbor. The negative team of Roach and Sheffet debated at Tech and were unsuccessful in their plea for disarmament while the affirmative team of Amann and Kircher lost a close decision at Pasadena College.

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For many years the debate between U.S.C. and Tech has been one of the most spirited and closely contested debates of the year, and though in the past U.S.C. has always been the victor, this year their strong team of Bautzer and Jones succumbed to Tech practicability. Ferguson and Chamberlain represented Tech on the negative side of the Pi Kappa Delta question and their wonderful material and presentation combined with an overpowering rebuttal left no doubt in the mind of the judge which team was the superior one.

On February 13th Tech started the conference race with a victory over Whittier. Zipser and Wilkinson clearly demonstrated that the peace movements under way at the present time showed a' definite trend toward world peace and that the world is demanding peace through disarmament. The Whittier team tried hard to disprove these contentions, but the judges' decision of 3-0 in favor of Tech shows the excellent work done by Zipser and Wilkinson.

One of the closest debates in the year was held on February 17 at La Verne, when Ingham and Kilgore journeyed to La Verne to uphold the negative side of the Conference question, losing by a two to one decision, while a few days later Hutchison and Sharp went down to defeat before the conference victors, when King and Espy of Redlands gained the judges' votes.

The Pomona-Tech Debate was held at Tech on February 28 on the Conference question. Tech was ably represented by Levine and Miles who upheld the negative side of the question. Featured by the sharp rebuttal, the close of the debate found the Tech men submerging Pomona with facts concerning the defects of the proposed disarmament plan.

The clash between Southwestern and Tech can always be counted on to be a real battle and this year proved to be no exception. On March 11th Ingham and Killgore lost to Southwestern on the conference question by a 3-0 decision. Tech upheld the negative side of the conference question, but the mass of evidence presented by the lawyers showing the necessity of disarmament could not be completely overthrown in the minds of the judges.

Determined to revenge the defeat of two nights previous the seemingly unbeatable team of Hutchinson and Sharp crushed the negative team of legal experts from Southwestern and thus evened the score between the two schools. Both members of the Tech team gave a carefully prepared case which contained irrefutable logic and was presented in a manner which was finished and convincing. The following week the same team of Hutchinson and Sharp which crushed Southwestern tackled the visiting team from the University of Oregon. Earlier in the season Tech met and defeated U.S.C. so this made the second victory over Pacific Coast Conference members for this year.

On March 22nd, an extempore debate was held with a visiting team from Oregon State College on the general topic of "World Peace." The arrangement was a slight variation from the regular extemporaneous contests. Mr. Untereiner drew up several questions all of which were on the general topic of "World Peace" and the following one was mutually decided upon as the question for the evening: Resolved, That the United States should not use armed force for the protection of foreign capital.





As both teams were well prepared on the general subject this contest provoked a lively discussion. Walter Wilkinson and Glen Miller represented Tech and their speeches showed that they both possess considerable extemporaneous speaking ability which is the hardest, yet the most valuable, aid in public speaking.

Stanford debaters are renowned for their finished speeches and wonderful delivery and the team which debated Tech on March 26th was no exception to this rule. The contest was a fast and furious one as the subject matter lent itself readily to apt illustration and humor on both sides. The question was, Resolved: That modern science tends to destroy theistic faith.

Of course the natural and appropriate side for the engineers was the negative and under the oratorical bombardment from the Stanford team the team of Amann, Kircher, and Hall presented a defense of science which undermined the emotional appeal of the visitors. Although the debate was a non-decision one, the contentions drew a heated contest and proved a subject upon which many new viewpoints may be presented.

Returning the visit of the convention team which defeated them on the P.K.D. question at Provo, Utah, a double team from Brigham Young University met Tech on April 7th at Tech. One team was masculine while the other was of the more deadly sex. The debate with the former was won by a 2-1 decision by Tech, while the one with the women failed to yield a decision.

In the annual Peace contest at Pomona in competition with the Southern Conference colleges, U.C.L.A. and Arizona, Robert Sharp again represented Cal Tech with his oration on "Patriotism," while the last forensic event of the year, the Conger Peace Contest, was featured in the finals by four men, all well known from past performances; John Hall, experienced debater, Robert Sharp, winner of the Old Line contest, Glen Miller, with debate experience at U.C.L.A. and Ray Cromley, hardened in extempore.



Zipser Hall Arnerich Cromley Wilkinson Tarbet Sheffet Amann Prudames Roach Sharp Kircher Levine Ingham Untereiner Ferguson Chamberlain Killgore



FRESHMAN DEBATE

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 of present day problems, the Freshman debate squad completed with honors this year its most intensive debate season. Engaging in some twenty-five contests, and offering every man on the squad an opportunity of participation in at least four inter-school debates, the unique Cal Tech policy of giving every man experience rather than one or two leaders proved very successful in bringing to light unexpected but welcome talent. Under the coaching of Ray Cromley, Freshman Debate Coach, the fundamental purpose was the training of the new men in the important principles, not only of debating, but of public speaking, and to provide an opportunity for their application in the experience of numerous inter-school and intercollegiate contests.

During the second term the majority of the debates were non-decision contests with the Junior colleges on their two Conference questions arranged by Richard Waterhouse, Freshman Debate Manager. The Chain store question was debated extensively by Harold Wright, Gregory Hartmann, Trent Dames, Rob Robinette, and Ray St. Clair, while Wesley Nelson, Charles Coryell, John Mendenhall and Robert Mac Kay engaged in a series of contests on installment buying. In a special debate with Hollywood High, Bob Burk and Robert Whittaker argued "Government Control."

In the third term began the rounds of Conference contests on the question "Resolved: That Mexican Immigration should be further restricted" with fiery arguments pro and con against the southern conference college Freshmen, including Pomona, Whittier, Redlands, LaVerne, U.S.C. and U.C.L.A. In these contests the affirmative was upheld by Charles Coryell, John Mendenhall and Harold Wright, while the negative boasted Wesley Nelson, Trent Dames and Arthur Cook.



BurkCromleyNelsonMendenhallDamesWhittakerSt. ClairRobinetteCoryellMac KayHartmanCookWright



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DRAMA






What a Life

"WAPPIN' WHARF"

A gloomy windswept cabin by the cliffs of Cornwall is the setting for "Wappin' Wharf," the pirate comedy written by Charles S. Brooks, and presented by the Dramatic Club under the direction of Gilmor Brown. The scenery was designed and painted by Helen Howell of the Pasadena Community Playhouse. Everything in the play from the ship's lantern that hung from the ceiling to the gin in the goblets and the effect of that beverage on the actors seemed real and true to life.

It must not be supposed that the last mentioned property had any bearing on the sudden and most unfortunate illness of Joe Foladare, who had admirably mastered the part of Duke, the wooden legged pirate. Although his theatrical demise necessitated the cancellation of the Thursday evening performance, understudy Paul Huston, of the Playhouse, successfully took over the part for the succeeding performances (April 25 and 26).

Mary Alice Wickhizer was "Betsy," the dainty heroine of the play who lived with the pirates under the doubtful protection of "Darlin'," the none-too-sober cook. Wilma Entwhistle had a natural talent for that part. The pirates, being too lazy for active buccaneering, settled down to the more lucrative business of wrecking ships by the use of misguiding beacons. Duke was the brains of the gang, but the ferocious growling of one-eyed Patch was most delectable, as was the menacing hook of the Captain. Red Joe also was one of the plotters, but it transpired that in reality he was a spy and a prince and most everything else that no one had suspected.

Songs of the sea coming from an invisible source behind the scenes were an unusual feature of the play. The Drama Club is indebted to many persons and groups of people, but particularly to the Pasadena Community Playhouse, which generously furnished every aid required.



CAST:

(In order of appearance)

Patch						Norman Wright
Duke		• .	Joe	Fe	olad	lare, Paul Huston
Darlin'					V	Vilma Entwhistle
Red Joe					Ric	chard Waterhouse
Betsy]	Ma	ry Alice Wickizer
Captain						David Cook
Meg						. Mary Duckett
Sailor Captair	1					Chester Keachie
		Sa	ailo	rs		

STAFF:

Director .	•						. Gilmor Brown
Associate							Charles Levison
Scenery A	rtist		0 -0		Υ.		. Helen Howell
Publicity	Dire	ector				W	alter Wilkinson
Stage Tec	hnic	ians		Erie	c Ho	wse	, Philip Janssen



The Pirates' Den



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ANDRIA

The plays of Terentius, the youthful Roman playwright, have been for centuries the despair of old age, and the joy of the younglings. The play "Andria" is no exception, replete as it is with shameless scandal and with outlandish buffoonery

Ray Cromley, the lecherous youth, was the cause of it all; for as Phamphilus he became involved with "Andria," the girl he loved, who was thought to be a courtesan from Andros, but who really was the sister of the damsel whom Phamphilus' father meanwhile had arranged for him to marry. This girl in turn was in love with Charinus, who until then had been a friend of Phamphilus. At the advice of Davus, his slave, Phamphilus pretended to agree to the match, but later found that he could not withdraw without defying his own father and offending the family of his betrothed.

Harold Roach, as Davus, was the star of the play. His antics kept the audience in a continual uproar. An example is his attempt to feed the baby in the play. His simplifying of matters was the source of great complication. In spite of his laziness, his propensity for eating apples, and his apparent imbecility, he really was very shrewd, and he actually did bring events to a satisfactory conclusion.

CAST:

Pamphilus..Raymond A. CromleySosia..Norman WrightCrito...Cremes...Charinus...Charinus...Dromo...Arthur Downie..Davus..Byrrhia..Lesbia..Simo..Alfred Voak

MANAGERIAL STAFF:

General Manager	Raymond A. Cromley
Publicity Manager	. Walter Wilkinson
Business Manager	Kenneth Miles
Stage Manager	Birch Horton
Electrician	Eric Howse
Assistants	Francis Laird
	Glenn Chamberlain
	Wendell Humphreys
	Herbert Deardorff



SOCIAL



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Dabney Hall

DANCES

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Junior Social February 28, 1930 Dabney Lounge Radio Bob Oaks, Chairman

36

Sophomore Student Body March 22, 1930 Huntington Hotel Mort Heydenrich's Orchestra Robert Carey, Chairman

ж

Tau Beta Pi April 5, 1930 and December 14, 1929 Dabney Lounge Culbertson Hall Johnny Crawford's Orchestra Pledges



Hotel Huntington



DANCES

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Rodeo Dance (Frosh) October 12, 1929 Culbertson Hall Campus Five Orchestra John Monning, Chairman

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Frosh-Senior Dance December 7, 1929 Culbertson Hall Johnny Crawford's Orchestra Bob Bungay, Chairman

×

Frosh Student Body December 21, 1929 Oakmont Country Club Herb Adkins' Orchestra John Monning, Chairman

CIT

DANCES

ж

Varsity Club April 19, 1930 Pasadena Golf Club Johnny Crawford's Orchestra Jack Sturgess, Chairman

36

Sophomore Social May 2, 1930 Dabney Lounge Radios Paul Arnerich, Chairman

ж

Combined Staffs Dance May 3, 1930 -Dabney Lounge Johnny Crawford's Orchestra Bob Stirton, Chairman



Culbertson Hall



Pasadena Golf Club

DANCES

ж

Interfraternity May 10, 1930 Santa Monica Uplifters Club Johnny Crawford's Orchestra George Liedholm, Chairman

ж

Junior-Senior Garden Party May 24, 1930 Dabney Lounge Bob Lehman, Chairman

30

Junior-Senior Prom June 14, 1930 Annandale Country Club Herb Adkins' Orchestra John Shields, Chairman



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CIT



Masonic Temple

BANQUETS

After the sweat and the grind, after the bruises of battle, then comes the real fun of a football season. Dear to the hearts of the gridiron warriors are the bull sessions that last from the echo of the last gun that ends the fall season until the thrilling whistle of the opening game, in September of the following year.

As a fitting climax to the last football season, an enjoyable banquet was held at the Pasadena Masonic Temple in honor of the Cal Tech teams who had fought so nobly on the gridiron during the fall months. After hitting the fruit cocktail and soup, the banqueteers threw the roast turkey and dressing for a ten yard loss, and finished off with plum pudding that tasted like the kind mother tries to make. With full stomachs and big stogies in their mouths, the happy feasters leaned back in their chairs to listen to a few after dinner speeches.

Professor Sorenson, acting as toastmaster and master of ceremonies, started things off in his usual way by telling some of the latest jokes from his never failing supply. The coaches then said a few words about the closing season and Tech's really brilliant prospects for the coming year. After the presentation of sweaters to the varsity lettermen, the other letters and numerals were presented to the very deserving second team varsity, scrubs and the frosh. On behalf of the frosh squad, Captain Mendenhall presented Coaches Layton Stanton, Frank Nickell, and Dick Folsom with tokens of the squad's appreciation of their help during the season. The senior lettermen were then introduced, and all expressed their enjoyment of being able to "play the game" for Tech.

After having heard impromptu speeches from some of the players' fathers, Captain-Elect Dickey expressed his appreciation of the honor bestowed upon him and of his high hopes for the 1930 season. Les Henry, a familiar figure, at our football banquets once again praised Tech athletic teams for their true sportsmanship.

Following the basketball season a less pretentious banquet was held in the Dugout in honor of the Tech melon-tossers, who showed the true Tech spirit on the varnished court. Later in the season the track banquet was held in Culbertson Hall.



THE YEAR



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FROSH COME

The Frosh showed their enthusiasm early by the large crowd which attended the Idvllwild retreat, where they were taught by the upperclassmen how to elude the zealous Sophs. Definite steps were taken in order to organize themselves, and special stress was placed upon them by Dean MacArthur so that they would under no condition entangle themselves in an open brawl before the date of the pushball contest.

Registration day found the Sophs just as "cocky" as ever, while the Frosh looked well pleased with their new beanies. Pants legs were rolled up and shirt collars were rudely inspected for any trace of red which was quickly removed when found; but this was soon stopped when the student body president happily informed the poor Frosh that the Sophs had no right to touch them. Again the Sophs determined to make the whole '33 class sing as they came out of Chem lecture, but this time they were stopped by Dr. Millikan who stated that the Assembly was about to begin.

After registration little hazing was done except for the occasional inspection of the freshman's faces in an effort to find a trace of hair. Frosh became more and more lax in their fulfillment of the "Red" tradition, so that many humiliating tasks were meted by the Court of Traditions. Sophomore shoes were shined, Frosh shaved

The Big

each other, Apollo was cleaned, and the front steps of Throop were patrolled by guilty Frosh who marched up and down shouting the hour at regular intervals.

The Frosh and Sophs had their annual pushball contest this year between the halves of the Pomona game. In spite of the hard fight which the Frosh put up, they were overwhelmingly defeated by the superior Sophs. The end of the contest found many of the participants clad in scant clothing, and everyone tired out.

On Saturday evening, October 12, a happy crowd of sophomores, freshmen, and their dancing partners glided over the floor of Culbertson hall at the annual Rodeo dance. The orange and white dinks with the green bills still graced, or perhaps disgraced, the heads of the freshmen, who, as a result of their losing the Rodeo, were not only giving the dance but were also still submissive to the iron hand of the sophomores. Matters were changed at the intermission, when Bob Carey, sophomore president, announced the dink ceremony, and afterwards welcomed the emancipated frosh at least as free, if not as equal, men. There was a response from the freshman chairman, and yells were given for the two classes. The dancers then completed the intermission around the punch bowl, which was filled with a delicious sophomorered colored drink. Finally the revellers went home.





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The Big

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TRIPS

The first large inspection trip was conducted by the Civil Engineering Department. Leaving San Diego the morning after the Thanksgiving Day game, the party of about 20 inspected a number of the dams and reservoirs of San Diego County. The party drove to Imperial Valley and parked in El Centro for the night. Saturday found them driving through the hills to Yuma where the U.S. Reclamation Project was inspected, including Laguna Dam. From Yuma on the party was the guest of the Imperial Irrigation District on inspection of the Colorado River Protection levees in Mexico.

The big spring field trip of the Geologists came during spring vacation and attracted 13 men. The purpose of the party was primarily to see the country and to visit the Frasure Mountain overthrust, San Andreas fault, Mojave Desert, Owens Valley, Death Valley and Las Vegas overthrust.

About 20 of the Chemistry Department left at noon on Friday April 25th for the potash and borax plant at Trona. The drive consumed most of the afternoon but the evening was spent consuming "green beer." Visits were made to the cement plant at Victorville and to the Kremer mine. The week of April 21 to 26th found five Civil Engineering men attending the Spring Convention of the A. S. C. E. at Sacramento.



ENTERTAINMENT

The exchange programs this year were marked by the high degree of quality and entertainment which they offered to the worn-out engineers.

The first program was offered by our neighbors on the end of California St.— Broadoaks. The major part of the performance was given to a school room scene, which thrilled the hearts of every Tech man.

A very fine program of Spanish dancing was offered by Miguel and Alicia. Likewise an amusing piano program was presented by Merle Waterhouse.

Living up to their reputation of presenting one of the best exchange programs of the year, Whittier entertainers came here March 29 to treat the Engineers to a most enjoyable hour of music. Their quartet made a big hit not only with its wonderful singing but also with its comedy acts.

The next program was offered by the Oxy girls who brought over their entire glee club. A few dances and novelty numbers helped to make the Engineers long for coeducation at Tech.

The final program of the year was given by Pomona. The number which pleased the student body the most was the dance given by a chorus of the girls of highest scholastic standing at Pomona.





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The Committee Miles Johston Wherritt Blohm Scharf Crane Ferguson McLean Zahn Cogen Hillman Levine (Chairman) Kuhn Pritchett Grafman

EXHIBIT DAY

Amazing and mystifying thousands of Southern Californians, every Tech man, from the proverbial "snake" on to the most public spirited, worked hard to make the annual open house event of this year the best of all. As the Exhibit Day came on Friday and Saturday, April 11 and 12, only two weeks after the opening of the third term it was possible to let scholastic work become less important for a short period and prepare the exhibits. Not since the football season had so many men worked together on the same task and for the same purpose. Whether exhibit day entertains all who come is a consideration secondary to that of many men working with one another for a common interest.

The student committee, with Ernest Levine as Chairman, was appointed in the middle of the second term and worked hard from that time until the doors were closed at 4 on Saturday afternoon. To all the members and especially Ernest Levine should go the credit for making the last exhibit day one of the best. Serving on this committee with Levine were for the Aeronautics department, Grafman; Civil Engineering, Carberry; Drawing, Hillman; Geology, Kuhn; Chemistry, Blohm; Mechanical Engineering, Zahn; Electrical Engineering, Pritchett; Physics, Wherritt; Traffic, Roach; Publicity, Hacker and Stipp; Biology, Scharf; Graduate Research, Crane; Humanities, Cogen.

A new plan, followed for the first time this year, was to substitute printed directions for the loud callings of guides. In previous years it has been the custom to gather the uninitiated together and send them forth upon their adventures accompanied by either a freshman or a sophomore guide to whom much of what he is leading the people into is also new. This year a guide book was published, containing the program of events, a map of the campus, and a directory of all buildings and exhibits in those buildings. This plan much simplified and almost eliminated the problem of large groups concentrating in the halls and around the exhibits.

Over six thousand copies of the special eight page edition of the California Tech with a special pictorial supplement insert were printed and distributed to the thousands of visitors that swarmed over the campus. This issue was the result of two weeks hard work on the part of a much enlarged Tech

staff and gave evidence to the world of the general adaptability of Tech men to fields other than their major interest. Attractively set in the middle of each page of the campus publication, there appeared a large T, ghost outlined with an orange line. Views of the beauty spots and new buildings on the campus were featured in the pictorial supplement which preserved for many visitors a lasting impression of the campus.

As many prospective freshmen tread the campus in a state of cautious indecision, much effort was given to undermining some of the misrepresentative rumors and traditions about Tech. Chief among these traditions that are spread by parents who are proud that their sons get in and parents whose male progeny were forced to adopt education not technical is that about the difficulty of getting in and the unmercifully hard work encountered when once in the institution. The fact that Tech men possess many characteristics in common with the rest of the human species and are not two-legged slide rules was emphasized in the special edition of the paper. The myth about entrance examinations being so hard that it takes a few days to recover from their effects was also among those it was desired to chase out of the minds of any who contemplated, with something nigh unto awe, attendance at the California Institute.

The usual fixtures of exhibit day were present except the synthetic punch from the chemistry department which saved many colored chemicals and small beakers. The high tension laboratory sparkled, the wind tunnel blew, the liquid air boiled on ice, the radio station deluged the campus with loud noises and some music, high school flappers paraded around in pairs or groups, people gazed at this and that, then forgot what this was. Exhibits of an instructive nature, were arranged in diabolical proximity to other exhibits designed to make the incredulous gasp with amazement; cathode rays threw shadows on the walls of an evacuated tube and across the room people saw a fifty cent piece undergo cell division first in a positive and then a negative direction.

Amid the olive trees of the Dabney Garden, fencers demonstrated the most effective methods used in the middle ages to relieve the pressure of population, and faculty ladies served tea and refreshments to many visitors. In Dabney Hall, people rested in the lounge or gazed upon the dormitories soon to grace the campus.







With the passage from pre-history into the era of written history events naturally become clearer to posterity. By the time of the early Egyptians, social, artistic, and intellectual progress had been carried quite far. Sculpture and architecture were developed. Investigations of scientific nature were begun and many additions were made to human knowledge and culture. The highly organized political system made possible the erection of such permanent monuments to man's ingenuity as the Sphinx, the great Pyramids, and the Temple of Karnak. Social organization, however, neglected and impoverished the mass of the people for the exaltation of a few. The history of the human race began to record the production and extinction of many civilizations. Those of the Chaldeans, Sumerians, Assyrians, Hittites passed away but newer and ever higher forms took their place. Greece flourished and fell to be followed by Rome and the progressive evolution continued.



BOOK V ORGANIZATIONS



HONORARY



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OFFICERS

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Richard G. FolsomBenCharles L. GazinPhiClaude DeW. HaywardFraErnest B. HuggRicCharles C. LashRoiStanley W. LohmanKaJohannes A. Van den Akker

Bernard N. Moore Phillip G. Murdoch Frank A. Nickell Richard D. Pomeroy Robert E. Pugh Karl M. Wolfe er



Ellis Stirton Moyers Bungay Wilson Strong Pritchett Scharf Pugh Stipp Whitman







UNDERGRADUATE STUDENTS

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Foladare Wheeler Bernhardi Janssen Hawes Hoeppel Fracker Read Crawford Hamilton Johnson





DRAMA CLUB

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

CLASS OF 1930

Raymond A. Cromley Joe Foladare John L. Hall

Warren B. Horton Samuel E. Howse Kenneth L. Miles Sidney Zipser

Edward C. Keachie

Charles E. Tillman

Otto Sass Merrill D. Tucker Walter D. Wilkinson

CLASS OF 1931

John S. Detweiler Duroc A. Jecker

John W. Mehl I

Alfred S. Voak Roger M. Wilson

CLASS OF 1932

Harold Roach Robert L. Sherman

CLASS OF 1933

Arthur J. Downie Wesley W. Nelson Richard S. Waterhouse Norman H. Wright



Zipser Keachie

Mehl Miles Hall Wilkinson Cromley Jecker

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FENCING CLUB

The Fencing Club was organized at the California Institute of Technology in the fall of 1928, with an original membership of eighteen men. Since the Athletic Committee did not see fit to finance the sport of fencing at the Institute, the members of the club paid for their own equipment and engaged as an instructor Captain John F. Duff, one of the foremost fencers of the west coast and instructor at U. C. L. A., Pasadena Junior College, the Jonathan Club, and several other organizations. He has been at one time open champion of Great Britain, fencing instructor in the French army, and fencing instructor of Benito Mussolini. Since the time of its organization he has been the coach of the club, lately with the able assistance of Mr. Cope, recently fencing instructor of the University of Washington.

Bob White was the moving spirit and first President of the club, holding that office until his graduation in 1929. At present William Shockley is President, and John D. Clark, Secretary and Treasurer of the organization.

Considering the youth of the club, and the small membership, it has made a brilliant record for itself in competition. Bob White took a second in an individual epee match during the first year of its existence, and T. V. Tarbot and Clyde Blohm took second and third respectively in the Southern California Prep foil match in December of 1929, while Johnny Weber took first place in the Junior epee match early this year. These places were taken in competition with such organizations as U. C. L. A., U. S. C., the Hollywood Athletic Club, and the L. A. Athletic Club, all with memberships many times the size of that of C. I. T. The present membership includes the following men: Millard Vernon Barton, Clyde L. Blohm, Victor Earl Bly, Bert V. Brasher, John D. Clark, L. Sprague de Camp, Fred H. Detmers, Jackson J. Gregory, Winton C. Hoch, Robert William McKay, Alfred Romer, Robert L. Sherman, William Shockley, Thomas V. Tarbot, John T. Weber, Samuel Stewart West.





VARSITY CLUB

Among the most widely known and active of organizations on the Tech campus is the Varsity Club, the members of which are chosen from the Varsity lettermen of the four major sports, football, basketball, track, and baseball, and from the two year lettermen of the minor sports, swimming and tennis.

The purpose of the Club is to further the interest in all forms of athletics at Tech, to recommend necessary changes in the athletic policy of the Institute, and by means of recommendations to advance the interests of the student body in all fields of endeavor. It is especially noteworthy that most of the outstanding men on our campus are wearers of the much coveted "little gold T," thus proving that general interest in student activities and executive ability go hand in hand with athletic prowess at Tech.

The annual student body dance sponsored by the Varsity Club is always one of the outstanding social events of the college year. The Pasadena Golf Club was the scene of this year's dance, and every-one who attended this gala affair will long remember it as one of the most enjoyable functions of the school year.

During the ten years of its existence, the Varsity Club has always been one of the leading organizations in promoting student body affairs. One of the little heard of, but nevertheless important examples of the activity of the Club is its share in maintaining the all-important Athletic Fund which provides the necessary finance to pay for medical attention required by injured players. The Varsity Club cooperates with the Associated Student Body in maintaining this Fund. In many other branches of student activity, the willing hand of the Club is there to help put Tech on top.

The following is a list of the members of the Varsity Club including the names of the sports in which they made letters. The letters awarded during the third term are not included in this list.





MEMBERSHIP

William L. Stanton Harold Z. Musselman Dr. Floyd L. Hanes Frank E. Alderman W. Walter Ayers Thomas G. Bernhardi J. R. Lester Boyle Elliott P. Bennett Arthur C. Brooks Frederick R. Cline William R. Cogen A. Thomas Crawford John W. Daly Walter L. Dickey Charles E. Dickerman Samuel C. Eastman Thomas H. Evans Ralph A. Futcher Clark Goodman Edwin F. Green Edward A. Hayes John F. Hesse, Jr. Ernest C. Hillman Aubrey Horn Roland F. Hodder Kedric V. Keeley F(2)

Honorary Honorary Honorary F(3,4) T(2) T(3) BK(2,3,4) F(3,4) BB(2,3) F(3) F(3) S(3,4)BK(3) F(2,3) F(3,4) F(3) T(2) BK(3,4) BB(3) F(3) T(2) T(3) BB(2)F(2) BB(2)F(2) F(4) BB(2,3)BK(2) BK(3)

Hugo O. Kleinbach T(3) Truman H. Kuhn F(3,4) Leslie V. Lani Ernest Levine George E. Liedholm G. Schild Lufkin Randal Maass Harris K. Mauzy James P. McLaughlin William H. Mohr Ross E. Morris Elmer Muff Oscar M. Newby Robert Oaks Leland Pratt Jack Pritchett Homer Reed George Rice Jack B. Sturgess William R. Shuler John W. Towler A. Carl Tutschulte Nick T. Ugrin George G. Watson Jeff A. Wineland

BK(2) F(4) F(3,4) T(3,4) F(2) T(3) BK(2)F(2,3,4)F(3) F(2,3,4) BB(2,3,4) F(3) BK(3) BK(2,3) BB(2,3)F(3,4) BB(2,3,4)F(3) F(3,4) F(2)BB(3)BK(2) F(3) F(2) BB(2)





PI KAPPA DELTA

"Pi Kappa Delta has become a thing of personality. It is more than a Constitution and By-Laws. It is more than its one hundred and thirty-two chapters in thirty-three states. It is a large fellowship family, interested in the achievement and health of its household. When national winners are mentioned in any contest, I am interested in knowing whether they are members of Pi Kappa Delta. I have learned to expect P.K.D. representative among such achievement groups."—George McCarty.

Organized for the purpose of promoting the interests of intercollegiate oratory, debating and public speaking by encouraging a spirit of intercollegiate fellowship, of brotherly cooperation and interest, the California Gamma Chapter, established at the Institute in 1921 by the former National President, Dr. John Macarthur, has in each succeeding year grown to greater prominence in the national field.

Its members, selected from varsity debaters who have shown their ability not only in two intercollegiate debates, but in earnestly striving for the development of forensics, have engaged not only in the customary forensic arts of debating, oratory and extempore, but in the annual presentation of a classical Greek or Roman play, known throughout Southern California as one of the features of the dramatic season.

Biannually the Gamma Chapter is represented at the National Convention of Pi Kappa Delta, where Tech teams meet leading debaters and speakers from thirty-two states and over one hundred colleges in contests to determine the national champions. This year's representatives, Francis Hutchinson and Robert Sharp in debate, and Ray Cromley in extempore speaking, ranked high in the national contests, which were held in Wichita.

Through the debating tours, through the intensive competition of the national conventions, and finally through the dramatic presentations, Pi Kappa Delta offers to the men of the Institute an opportunity of an insight into matters of culture, offers Tech men an insight into the study of world problems, and an insight into the highest plane of intercollegiate fellowship.

In the words of Alexander Meiklejohn, President Emeritus of Amherst College: "It seems to me that stronger than any other group, tougher in intellectual fiber, keener in intellectual interest, better equipped to battle with coming problems, are the college debaters—the men, who apart from their regular studies, band themselves together for intellectual controversy with each other and with their friends from other colleges."



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SIGMA XI

As one of the greatest honorary graduate research fraternities on the campus, Sigma Xi has enjoyed a most successful and prosperous school year. The intent and purpose of the organization, to promote and further research work, is a high-minded and fitting motif for such a nationally renowned graduate institution. Most of the faculty members of Cal Tech, those of the engineering and scientific training staff, hold a membership in Sigma Xi and have elected from among their group an excellent set of officers. They are: Prof. R. W. Sorensen, president; W. V. Houston, secretary; L. C. Pauling, treasurer.

At the meetings held on the second Monday of every month at noon, one or two speakers offer short lectures on different phases of research work conducted by them. These discussions take place following luncheon of the members in Culbertson Hall. Some of the most prominent men at Cal Tech and others in and around Los Angeles have been given the opportunity of expressing their plans and ideas before this group of research workers. A few of the many speakers include: Dr. E. T. Bell, Dr. T. H. Morgan, R. R. Martel, Dr. J. A. Anderson, Edwin Hubbell, and many others of both the physics and chemistry department.

The members of Sigma Xi are elected to the organization, because of their ability to do research work. Several capable students each year are made associate members after showing their ability to conduct scientific investigation, and upon graduation are eligible for admittance as members pending their election. In this way many of the most promising scientific and engineering graduates of this school take a great stride forward by having connections with this nationally known organization.

The arrangement of the programs and the business of securing speakers for the monthly meetings is the work of Prof. S. S. Mackeown of the Institute. Prof. Mackeown has proved himself of great value to the fraternity inasmuch as he has always provided a well-known and interesting speaker. The national organization of Sigma Xi is furthering the aim of the fraternity to promote the work in scientific investigation, by offering to worthy graduates scholarships to be used in specified schools for the carrying on of some phase or type of research work. These scholarships are given for use in other schools than Cal Tech and are well worth a student's trouble in working hard and diligently.







Downs Mehl Zipser Pratt Stirton Ingham Cromley McMillan

THROOPERS

The Throopers are a small group of men who have their hearts set on improving the spirit of the students of the student body. The organization is now enjoying its fifth and most successful year of service to the College. Its members are eleven in number, six from the senior class at large, three from the junior class, and the A. S. B. president and yell leader. Those outstanding men who were this year honored by membership in the club were: John McMillan, president; Cromley, Downs, Ingham, Langsner, Mehl, Mitchell, Rossall, Stirton, Tucker, Pratt, Zipser. They have set before themselves the following aims: To foster and increase college spirit, to strengthen and uphold the college traditions, to endeavor to promote friendly relations between the colleges, to see that all possible courtesies are shown to visitors. They have assumed the following definite duties in connection with their general interest in student body, supervision of rallies and student assemblies, and the operation of all student bulletin boards.

Among the accomplishments of the Throopers during the past year was the Tech-Pomona dance given early in the year in Culbertson Hall. It was agreed by all who attended that the dance was a huge success and helped materially to improve our friendly relations with Pomona College. The Oxy Rally and Pajamerino was a second example of their work. The Frosh supplied the imposing bonfire on which the Tiger was cremated. Before the parade of the pajamerino, a new beaver was presented to the student body and the old one respectfully burned. The Big Pines trip, engineered by the Throopers, was another of their activities to foster good spirit among the students.

The Throopers put on many successful assemblies during the past year, to the delight of the students, among which were the Spanish dancers, Miguel and Alicia, and an outstanding jazz pianist, Merle Waterman from Hollywood. A more serious and educational type of program was given in a few reels of movies, called "The Story of Lead Mining and Milling." Men from such industrial concerns as the Bell Telephone Laboratories talked in other assemblies on opportunities in their lines of work. Two Fridays were devoted to the discussion on the part of the students and faculty of the benefits to be derived from outside activities.



PRESS CLUB

Men interested in journalism have joined themselves together in the Press Club, which has for its aim the development of the highest type of newspaper work. This organization, functioning in conjunction with the "California Tech" and the "Big T," does all in its power to make these organizations the finest examples of good journalism. The Press Club not only fosters writing, but is vitally interested in good literature. Meetings are held from time to time for the informal discussion of literary topics, which relate not only to journalism but to other forms of literature as well. Faculty members sometimes give readings stimulating thought and argument.

The organization is made up of men elected to membership from those 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 organization also takes the lead in the putting over of the annual "Tech" and "Big T" staff dance, and new members are initiated at a dinner each year. Perhaps the primary purpose of the Press Club, however, is to foster a high appreciation for journalistic style and makeup. 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. The staffs of the California Tech and Big T draw many who find pleasure in expressing their joy in student body life by reportorial and editorial work on our publications.



de Camp Clark Zipser Voak Bechtold Grafman Jecker







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DORM CLUB

Under the leadership of a popular set of officers, the Dorm Club, composed of members of the dormitory, enjoyed a very pleasant and successful year. About fifty-two freshmen lived at the Dormitory under the guiding hand of their matron, Miss McFarlin. The officers of the Dorm Club are as follows: Jerome Muller, president; Walter Scholtz, vice-president and secretary; and Harry Stewart, treasurer. In case any disorder should arise, two graduate physicists, Carlyle Mouzon and Lynn Rumbaugh, have been installed in the house. No occasion has yet presented itself where the two graduates were required to quell any disturbance. Perhaps the chief reason for the quiet reigning in the Dorm is the fact that in the Dorm's old location, the electric power switch was located on the outside in a handy place for mischievous sophomores, while at the present time the light switch is on the inside of the house away from practical jokers.

Upon the completion of the Dorm Club's organization, many plans were made for the betterment of fellowship and understanding among the Dormitory residents. Each Thursday evening the club has a faculty member for dinner. In this way those professors and instructors of freshman classes have a chance to meet a few of their students out of the classroom. A novel dance was given by the club at the beginning of the school year, the primary purpose of which was to give the fellows who did not know how to dance an opportunity of learning. The girls who offered to give dancing instruction belonged to a Pasadena Junior College sorority. The affair was a huge success and many of the men were able to make social contacts which will place them in a happy position throughout their undergraduate study.

At Christmas time a plan was formulated by which each Dorm member was to give and receive at least one present, and on Christmas Eve a happy time was had in passing presents around and opening them up. The Dorm Club capped the occasion by presenting Miss McFarlin with a very handsome and useful present.



Y. M. C. A.

The California Institute of Technology Young Men's Christian Association is a member branch of the Student Division of the National Organization. Through its program and activities the "Y" endeavors to carry out in the campus life the ideals and the ethics of the Christian precepts.

The "Y" is one of the first contacts the incoming student has with Tech. Contacts are gained through the Cabinet members writing personal letters to all the members of the Freshman Class; the registration day program, with which the "Y" cooperates with the A. S. B.; the Idyllwild Conference; the Handbook.

During the year many conferences and meetings are held, open to the whole student body. The most important of these is the winter conference held at Asilomar during the Christmas Holidays. Nine men attended from Tech this year.

A long list of practical services such as summer jobs; typewriters; blotters, humorous and other magazines; room and board lists; employment service during the year (this year amounting to over \$5,000.00 earned by 123 men) would only begin to tell the story of the program of the organization.

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COSMOPOLITAN CLUB

One of the most unique organizations on the campus is the Cosmopolitan Club. Its purpose is primarily social, striving for a closer bond of friendship between the American and Foreign students and to secure an adequate understanding of the customs and habits of the peoples of the world. In order to promote this friendship various affairs are sponsored by the Cosmopolitan Club to which all foreign students, and others who are interested, are cordially invited. Good speakers are secured and provision is usually made for a discussion of questions and problems in world affairs. Following these talks and discussions appropriate refreshments are served and the students are encouraged to mix around and get acquainted with each other. Many acquaintances are made in this way which prove to be a source of pleasure and benefit long after the occasion is forgotten.

The Club was organized on the Tech Campus in 1925 under the auspices of the Y. M. C. A. and has continued to enjoy a program of activity and accomplishment that has won it its present status on the campus. It cooperates with, and is closely affiliated with the National Student Federation of America, in carrying on its program to bring the younger students of the world into a better understanding with each other in a concerted attempt to promote world friendship and peace.

Inter-racial friendships among the students are promoted not only on our own campus but on the campuses of other colleges in Southern California as well. Intercollegiate affairs are frequently held, the most popular with Tech men being those with Pasadena Junior College and Occidental College. The high-light of the year occurs when the Associated Cosmopolitan Clubs of Southern California hold their annual two day conference, usually sometime in March or April. One of the member colleges usually acts as host to some hundred representatives from the other colleges. This year the host was the University of California at Los Angeles.








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CIT



Strong Downs Bell Buffum Sturgess

Hatch Dickerman Shields Crawford

INTERFRATERNITY COUNCIL

One of the most active and yet little heard of organizations on the Tech campus is the Interfraternity Council, the group of Greek lettermen who govern the affairs of the five local fraternities so quietly and yet so efficiently. The Council is composed of representatives from each of the five local Greek Chapters, two members from each House having an active vote in the meetings.

The main function of the Council is the establishment and enforcement of rushing rules on the campus. It is especially to the credit of this year's Council that even with the increased size of the freshman class and the consequent extension of the period of rushing from three to five weeks that the season was completed with very few misunderstandings and the settlement of difficulties with impartiality and fairness. The true spirit of the group is shown by the precedent established during the past year in maintaining exchange nights. Once a month three men from each fraternity visit each of other houses, being entertained with dinner and cards or just a good get-together. This custom, started by the Interfraternity Council, tends to create a spirit of good fellowship among the fraternities which goes far toward raising the school spirit at Tech above that of any of the other colleges in the west.

Each year the Council sponsors the Interfraternity Ball which is truly the outstanding social event of the year. The details of this formal dance are arranged by a committee chosen from the members of the Council. It has as its aim the creation of an understanding spirit between the fraternities which does much toward supplanting the rivalry, that is so prevalent on other campuses, with true friendship.

The members of the Council spend many hours each term discussing interfraternity problems, and it is only after very serious consideration that suggestions are made. The past record of the Interfraternity Council shows an ever increasing movement toward complete understanding between the Greek Chapters, and it is undoubtedly only a matter of time before the aim of this Council will have been attained.

The five chapters were represented during the past year by the following men: Gnome, Roscoe Downs and Frank Crawford; Sigma Alpha Pi, Charles Dickerman and Jack Sturgess; Pharos, Austin Strong and William Hatch; Gamma Sigma, John Shields and Charles Buffum; Pi Alpha Tau, William Kelley and Thomas Bell.

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SIGMA ALPHA PI HOUSE Founded at the Institute in 1914 399 South Mentor

PI ALPHA TAU HOUSE Founded at the Institute in 1921 330 South Lake

GAMMA SIGMA HOUSE Founded at the Institute in 1925 415 South El Molino

GNOME HOUSE (Kappa Gamma) Founded at the Institute in 1897 289 South Madison

PHAROS HOUSE (Phi Alpha Rho) Founded at the Institute in 1921 593 East California







MODERN MAN

Living as we do in an age of comparative physical comfort with multitudinous devices, utilizing and guiding the forces of nature into productive efforts, we cannot consider our condition as static. Man has yet to become super-man. Our social system which is ever placing more emphasis on the individual is still evolving. Our artistic life and aesthetic appreciation are expanding into myriad channels. But our intellectual effort must not slacken if we are to continue to meet all the contingencies that befall the race. The processes of evolution, specialization, and extinction of races under the influence of climate and competition, manifested in the rise and fall of civilizations, are still active. In the realm of scientific achievement we have many worlds to conquer.



book vi HUMOR

To the Advertisers...

WE wish to earnestly and sincerely thank you for your support, and to assure you of our desire to cooperate with you and to serve you in every possible way.

> BUSINESS STAFF THE 1930 "BIG T" L. L. FERGUSON, Business Mgr.

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1930









To the Student Body

I N this copy of the 1930 "BIG T" you will find features which heretofore have been considered to be too costly to incorporate into this type of an annual; and which are not to be found in the year books of any college in the Southern California Conference, nor will you find these features in any previous editions of the "BIG T."

Three-color division pages, three-color opening section, grid graphs, and many other new features are presented this year for the first time; and at considerable additional expense. That it has been possible to give these features is due solely to the increased support of the advertisers in this annual.

It is, therefore, only fair that you show your appreciation of their support by in turn supporting them. Many of these advertisers have been forced, due to the general business depression which has prevailed, to make a very real sacrifice to advertise here, and that they have made this sacrifice is ample proof of their personal interest in the enterprises here at Tech. Only reputable firms whose products are known and who can be sincerely recommended to you have been sold space, and you are assured of a welcome, just treatment and fair prices at their establishments.

For these reasons, therefore, you are urged to patronize these advertisers, who, by their assistance have made possible this better "BIG T" of 1930.

L. L. FERGUSON, Business Manager.





An Expression of Appreciation

THAT the publication of this volume has been a financial success is due to the co-operative effort of many groups as well as individuals. It is to all of these that it is desired to tender a very sincere and grateful acknowledgment of appreciation and indebtedness. But there are some to whom, by reason of their greater service, greater thanks is due.

To Fred Cline, Editor and Business Manager of the 1929 "BIG T" a very considerable debt is owed for his advice, work, and co-operation with the staff this year. Because of his experience he has been able to, and has, pointed out new sources of income, possible savings, and the many small details of the work that are necessary requirements for the smooth and successful operation of any business organization.

To Miss Dorothy Koerner, who assumed the burden of the secretarial work this year, is due in a very large measure the success of this annual. Because of the trial of many previously untried features the work this year has been unusually heavy and the admirable manner in which Miss Koerner performed and accomplished this work reflects even greater credit upon her ability and willingness to serve, and has indebted the entire business staff to her.

To G. E. Orme and the personnel of the Western Lithograph and Coast Envelope and Leather Products Companies, and B. H. Hooper of the Bryan-Brandenburg Company, we owe very much, for their advice, suggestions of savings, and willingness to co-operate has helped to make possible the incorporation of features in this book that otherwise could not have been accomplished.

And to the efforts of C. K. Stipp, Advertising Manager, the financial success is in the largest measure due. His continuous work and organization in the face of the discouragement resulting from the increased difficulty in selling advertising because of the financial depression just undergone has resulted in the largest advertising returns the "BIG T" has ever received. This is an achievement of which one may justly, and should be, very proud.

Finally it is desired to thank every one, individually and collectively, who has contributed to the financial success of the "BIG T" of 1930.

L. L. FERGUSON, Business Manager.

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"What'll we do with that roast beef and soup and potatoes and stuff that's left over, Nick? Give 'em hash again?"

"Better not, Joe. The public is getting kinda tired of mergers."—Judge.

Cop: "The dame we pulled in last night wants to confess."

Sergeant: "Who does she think I am-Bernarr MacFadden?"-Pennsylvania Punch Bowl.

Captain: Whoever he is, there is a dirty sneak crook on this squad. In the past week I've lost a set of Stanford shoulder pads, a Yale sweater shirt, a pair of Harvard pants, a Northwestern blanket, a couple of Y.M.C.A. towels.

-Carolina Buccaneer.

Heir: "Do you like romantic old ruins?"

Heiress: "If they'd only stop asking to marry me."-Grinnell Malteaser.

Girl at game (watching huddle on the field): There they're at it again! I do hope Bill won't repeat that story I told him last night.

-Illinois Siren.

Man: "Say, waiter, there's a hair in these potatoes!"

Waiter: "If our food pleases you, sir, tell your friends, that's our motto."—Kansas Sour Owl.

Delighted Daddy: "What'll we call it?" Moderate Mamma: "Quits." —*California Pelican.*

"An ancient precipice has been removed," punned the civil engineer as the cliff was blown into fragments.—*Brown Jug*.

Fond Mother: "How much do you charge for taking children's photographs?"

Photographer: "Five dollars a dozen."

Fond Mother: "You'll have to give me more time. I have only ten now."-V.M.I. Sniper.



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Small Brother: "I just saw you kiss my sister." Young Man: "Here. Keep still. Put this halfdollar in your pocket."

Small Brother: "Here's a quarter change. One price to all-that's the way I do business.'

-Pennsylvania Punch Bowl.

Caller: "I wonder if I can't see your mother, little boy. Is she engaged?"

Willie: "Engaged, hell! She's married." -Grinnell Malteaser.

Doug: "Where in the devil is my comb?" Star: "Dunno; but I saw you part with it this morning."-Drexel Drexerd.

Lon: "I'm going to shoot you." Clive: "Why?" Lon: "I've said I'm going to shoot anyone who looks like me." Clive: "Do I look like you?"

Lon: "You do."

Clive: "Shoot!"-Northwestern Purple Parrot.

Foreign lady in drug store: "I vant some powder."

"Mennens?"

"No, vimmens!"

"Scented ?"

"No, I'll take it mit me!"-Drexel Drexerd.

Her: "You know, I simply can't bear children." Him: "Well, who asked you to?"

-Arizona Kitty-Kat.

As Commander Byrd might have it: "Well, if you knows of a better pole-hop to it !"-Judge.

It seems to us that the Russian-Chinese argument over a railroad could be satisfactorily settled by allowing the Chinese to write the timetable and letting the Russians call the stations."-Judge.

Nit: "Say! Did you hear about that terrible new brain disease that's sweeping the country?" Wit: "Aw, don't worry-you're immune." -Johns Hopkins Black and Blue Jay.



MURDER MYSTERY

Riddle of Mysterious Deaths of Prominent Faculty Members At Last Solved

Illustrated by W. E. Johnston, Jr.

At last I am at liberty to set down the incredible happenings that startled Pasadena in the year 1929. Though the credit for the solution of those ghastly murders has generally been given to Buron Fitts, the Los Angeles District Attorney, it really belongs to a young social aristocrat with a dolicocephalic skull, named Raymond Cromley.

One fine autumn morning Cromley, in dressing gown and slippers, was lounging in his suite at the Huntington, smoking his corncob pipe, when Weevil, his English valet, entered to say that two gentlemen wished to see him.

The gentlemen were Mr. Van Buskirk and Dr. Macarthur of the California Institute of Technology. On their being shown in, one could see at once by their expressions that their visit was on a grave matter.

Van Buskirk barely noticed Cromley's greeting, but burst out with, "Mr. Cromley, we need your help at once. A terrible thing has happened. We must have your help. There has been a murder!"

Cromley looked at him with a bored expression. "Murder? H'm, how amusin'."

Dr. Macarthur spoke. It was plain that Cromley's attitude nettled him. "But this is serious. Poor Charles Schweiso is the victim! Oh, it's ghastly!" he cried, covering his face with his hands.

Cromley's cruel mouth twisted into a faint smile. "Chuck, eh? Well, well! I always thought that'd happen eventually. Well, gentlemen, what do you want me to do about it? Haven't the police taken care of the matter?"

"Oh, you know these bungling policemen," said Van Buskirk. "They'll sniff around for clues, and look mysterious, and tell the papers that they're closing in on the suspects and expect to make an arrest before tea-time tomorrow, and eventually the matter will be allowed to slide without avenging poor Chuck's death. You must help us!"

Cromley yawned and lit a Benson and Hedges. "Oh, well, 'spose I might as well," he drawled.

An hour later, accompanied by Dr. Macarthur and Mr. Van Buskirk, he pushed through the crowd around the Y.M.C.A. office in the basement of Dabney.

"Where's the corpus delicti?" he inquired. "Oh, here we are. My, my. Very much delicti, too."

The body lay behind the desk, sprawled out as if merely sleeping. On the features there was nothing but an expression of tranquil repose.

Cromley lit a Dunhill. "Poor old Chuck. Well, well. Y'know, Mac old dear, I was just thinkin' this morning how odd it should be that we haven't had any really decent Chinese vases since the T'ang dynasty. Ming, you say? Decadent, my dear fellow, absolutely decadent."

"Yes, yes, all very true no doubt, but what has that got to do with this?" snapped Van Buskirk. "How d'you know it's murder at all? Why

not apoplexy?" drawled Cromley.

Dr. Macarthur lowered his voice. "That's what the police thought. But I didn't tell them that Charles was in my office yesterday, and told me that he had received a 'phone call telling him he would be murdered this morning. He laughed about it at the time. John Gaylord spoke to him this morning outside his door (we have witnesses to that); saw him go in and sit down at his desk before he, John, closed the door. Ten minutes later he was dead."

Cromley glanced again at the corpse; then bent over it and straightened up with some small metal

object in his hand. "There's your efficient Pasadena police. Looks like an ordinary thumb tack, eh? I say, have one of your chemist chappies analyze the point. Probably smeared with some powerful alkaloid. Don't scratch yourself with it, unless you want to follow Chuck."

Half a day later the body had been removed and the three men were seated in the Lounge.

"Y'know," said Cromley, lighting a Murad, "from the portion of Chuck's anatomy from which I extracted that tack, I'd say that it had been planted on his swivel chair before he entered the office."

At that moment Dr. Swift of the Chemistry Department entered. "Say, Mr. Cromley," he said, "we got that tack almost finished. It's an organic arsenic compound—pretty sure it's cacadyl. We'll know for sure by tomorrow."

"Cacadyl? O, yes, yes," said Cromley, blowing smoke rings, ellipses, and figure-eights. "Cacadyl. Who in the Chemistry Department would be likely to make cacadyl? H'm." He settled back in his chair and gazed at the ceiling. Suddenly he sat up. "I say, Mac, old thing, I don't think Dr. Lucas has told us all he knows."

"But we haven't seen Dr. Lucas today yet," expostulated Macarthur, patting his head.

"That proves he hasn't told us all he knows," Cromley replied frigidly.

"But why Lucas?" asked Van Buskirk.

Cromley stared at him with an air of amused superiority. "Y'see, it's like this. Of course, it must be admitted that a few of the artists of the Ming dynasty produced some fairly decent vases. Now I———"

At that moment Dr. Yost strolled in. "Thought you might be interested," he announced in a matter-of-fact voice. "Lucas* is dead. Centrifuge burst and killed him. Looks like it might be murder."

* * * * *

Cromley lit a Three Castles as Yost drawled, "No doubt about it. The tension members in the frame of the centrifuge were filed." The crowd gathered around shuddered.

*See "The Preparation of 2-Bromo-p-Cresol from p-Nitrotoluene," Howard J. Lucas and Nathan F. Scudder, J. Am. Chem. Soc. 50, 244-249, also "Condensations of Methylmalonic Ester; Methylations with Methyl Bromide," Howard J. Lucas and William G. Young, J. Am. Chem. Soc. 51; 2535-2538.



Eagleson Out-Instantaneously

Cromley straightened impressively. "I say, will some one get me the figures from Miss Dierkes on how many students have transferred recently to the Chemistry Department, and from what other departments?"

* * * * *

Cromley looked at the sheet of figures with a slight sneer. "Mac," he said, "most amusin' coincidence, isn't it, that so many geologists should have decided within the last month to follow henceforth the muse of chemistry?"

"Chemistry never had a muse," snapped Macarthur.

Cromley looked at the Doctor in a pained way. "Should have had. And don't pick my metaphors to pieces. It annoys me. But how about the geology department. I never did like John Peter Buwalda's attitude on Cro-magnon art, particularly of the aurignacian period. He has no eye for the soul."

The door of Dr. Macarthur's office swung open, and Dr. Yost walked calmly in. "Funny thing," he said, "but Buwalda just got a real dose of erosion."

"What do you mean?"

"Oh, he's dead. Skeleton found tied up in the wind-tunnel. Amalgam filling in the second upper left bicuspid; so must be him. He's been tied up in front of the fan, and some one evidently started the thing going and tossed handfuls of sand into it till Buwalda was all eroded. There was





sand all over the place, and the bones were all scratched up. It might be murder."

Dr. Macarthur buried his face in his hands. "I can't stand it! You must do something, or we'll all be murdered!"

Cromley sighed. "Oh, very well, I'll go over and have a look at the remains, that is, after I phone Lickter's for some more cigarettes."

Cromley, Dr. Macarthur, Dr. Arthur Klein, and sixteen policemen stood dwarfed by the great

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shaft of the wind-tunnel over their heads. Dr. Klein was speaking. "Whoever did it must have come in after five o'clock, because Clark Millikan and I didn't leave till then, and we'd certainly have heard something if anyone was monkeying with the motor."

Cromley eyed him coldly and lit an English "You're sure that neither Bralitz nor Oval. Sechler could have entered between four and five?"

"Not without our letting them in. We had the door locked all afternoon as we didn't want our airship model disturbed again. Sechler lost his pass key the other day, and I don't think Bralitz has one."

Cromley gazed at the ceiling. "Y'know, Klein, that's a fairly good car of yours, but I've often thought that, to get the proper effect, you should have it chromium-plated all over. Take, for instance —

A loud clang of metal cut short the sentence. Immediately the startled investigators heard a low moan, seemingly from the bowels of the earth, which rose to a roar and then to a scream. "The motor!" cried Klein, and dashed out the door leading to the basement stairs. The others looked at one another in bewilderment, that is, all except Cromley, who was lighting another cigarette. Then, above the whine of the motor rose one single, appalling human shriek. Seventeen men raced and one sauntered toward the door out of which Arthur Klein had gone to his fate. . . .

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Cromley stopped at the door and glanced at his platinum watch. "I say, you chaps, it's late and I haven't had any dinner yet. I suggest you have the janitor pick up the remains with a sponge in the morning. Tell him not to bother about cleaning the propeller; the thing'll have to be dismounted to have the blades straightened anyhow. And you might shut off the power to the building before some one else is made into hamburger. Ordinarily there's a safety device which prevents the motor being run while there's anyone in the tunnel, but that's evidently been put out of commission."

* * * * * *

A gibbous moon leered over the campus as Cromley and Dr. Macarthur picked their way around the mud holes north of the Aeronautics Building. Cromley gazed thoughtfully at the sinister bulks of nine battered freshman flivvers parked on the San Pasqual driveway. He drew a long puff. "Y'know, Mac, old thing, I'm jolly well moved to wonder if there's any significance to the little argument between Klein and Dr. Lomonossoff. It seems our distinguished visitor was a bit miffed because the Aeronautics Department wouldn't install a Diesel engine for the propeller in place of the motor they have there now."

"Surely you don't suspect Dr. Lomonossoff!"

"I suspect everybody and nobody. Meanwhile, what do you think of this hyper-futuristic painting technique of the new genius, Albrecht Von Schwartzenschlockerstein?"

* * * * * *

The death of Doctor George V. Lomonossoff, it will be remembered, came as a great blow to the Institute. The distinguished Russian professor was discovered by Professor Sorenson the morning



after the murder of Dr. Klein. He had been suspended by his feet from a beam in the high-tension laboratory, and electrocuted with 750,000 volts.

Raymond Cromley, lounging in his suite at the Huntington, lighted a Fatima. Addressing Dr. Macarthur, whose face showed the strain of the preceding twenty-four hours, he said, "No, Mac, I don't think I'll go down. I have my theory all worked out, and to go look at the evidence would be merely confusing. That's all evidence ever is anyhow—confusing."

"What is your theory?"

"What? Oh, simple enough. Morgan killed him."

"Doctor Morgan!"

"Certainly. He was jealous of Lomonossoff's beard. That's obvious.

"But what—why—who—but Doctor Morgan is a biologist! He wouldn't know anything about operating the million-volt apparatus."

"All the more reason for suspecting him."

"But your theory would apply equally well to Professor Martel, who disappeared from the camp-



CIT



us three weeks ago under mysterious circumstances.'

"How could it, if Martel's disappeared? And Merrill isn't here any more, which leaves only Morgan."

"Are you sure that the electrical engineering department is -

"Oh, quite. A man with a skull shaped like Sorensen's would be psychologically incapable of the crime.'



A knock on the door was heard, and Dr. Yost entered. Dr. Macarthur stared at him like one hypnotized. "Another?" he breathed.

"Uh-huh. Morgan* this time."

*See "The Effect of Temperature on the Viability of Super-females in Drosophilia Melanogastor" and "Genetical and Cytological Proof of Translocations Involving the Third and Fourth Chromosomes of Drosophilia Melanogastor"; both by Th. Dobthansky.

"How ?"

"Frozen. Gimme a cigarette."

"Cold room. Got shut in somehow. When we opened the door, he fell out with a clank, and little pieces chipped off and went skidding around the floor."

Cromley smiled superciliously. "That simplifies matters. If Morgan killed Lomonossoff, we needn't worry about that case any more. As for who killed Morgan, I think we might investigate the paleontology men. I understand that Morgan and Stock disagreed for years about the exact line of descent followed by the rhyncocephalia."

Dr. Macarthur leaned forward. "You think then-that Dr. Stock ----"

"Oh, don't be obtuse. By the by, you never answered my question about Albert Von Schwartzen-you answer the telephone, Yost. I'm not in the mood."

Dr. Yost picked up the receiver. "Hullo . . . veah . . . uh huh . . . yeah . . . no, he's too lazyyeah . . . well, well . . . a skull? What kind of a skull?... bit him? ... well, that's what I call ingenious . . . sure, I'll try." . . . He turned to Cromley. "Another one. Stock."

"How? What was that about a skull?" asked Dr. Macarthur.

"Skull bit him."

"What kind of a skull? How did it bite him?"

"Spring mechanism. Poisoned teeth. Some prehistoric animal."

"Good heavens!"

"Damn clever, I'd say. Gimme a cigarette."

"How did it happen?"

"Lecture. Skull on the desk. Rested his hand

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on the lower jaw, and clank! He never even yelled."

"Who will be the next one? Gentlemen, it may be one of us!"

"Uh huh. Damn likely. Cromley, will you gimme one of your cigarettes?"

* * * * *

Cromley ground out his cigarette on Dean Hinrichs' desk and paused to light a Markoff. "Now, as I was saying about Matisse ——" Dr. Hinrichs interrupted him. "You weren't saying anything of the kind; and moreover, if you digress a few more times onto the subject of art, Dr. Macarthur and I will have to be removed to a couple of nice padded cells! Now get down to business."

Cromley looked at him with an air of not particularly tolerant superiority: "My good man, must you shout so? After all, we'll probably all be murdered within the next twenty-four hours anyway; so why not spend such time as remains to us enjoying life in a cultivated manner? But you seem impatient. I may as well expound my latest discoveries. One is that there is no connection between these murders. Don't look startled! I know the police think there is a connection and have placed a guard around the campus. In fact, it's the chief reason why I've rejected the theory. These bungling police never get anything right; so, if they say there's a connection, there can't be. Also I wasn't serious when I said that we were all likely to be murdered. In fact, I can state quite definitely that there won't be any more murders. You may send the police home because from now on the campus will be as safe as a nursery." He turned as the door opened. "Oh, come in, Yost. Too bad there aren't any more chairs, or I'd ask you to sit down."

Yost, looking particularly cheerful, uttered one word, "Eagleson."

"Is he murdered or is he the murderer?" asked Dr. Macarthur.



MacArthur

"Dead. Heart failure."

"Was it—was it accidental?"

"Damn improbable, unless it wandered clear up here from the Selig Zoo by accident."

"What wandered?"

"Snake."

"What do you mean? Tell us about this," snapped Hinrichs.

"Boa constrictor, about twelve feet long. Appeared in English class from nowhere. Eagleson clunk! Out, instantaneously. Boys hauled him out and shut the door."

"Is it still in the room?"

"No, they got it stretched out and strapped to a




board. It's harmless until they get it back to the zoo."

"How did-how was the beast captured?"

"Ether and chloroform through the keyhole. Used up all the damn stuff in the chem department-they forgot that damn forced draught. You may not be able to use Dabney for a couple of days."

Cromley took a long puff and blew rings. "Proves my theory," he drawled.

"What theory? Didn't you just say there wouldn't be any more murders?"



"My theory is that E. T. Bell is at the bottom of all this. I'd have said so sooner if I hadn't been interrupted by ---- " he looked reproachfully at Yost-"trivial announcements."

"You also said that there was no connection between these ghastly crimes."

"Did I really? Fancy that. Amusin'. Preposterous, in fact. I couldn't have said that. The connection is obvious. Of course, there's a connection. But about Bell. Have you read his books? Not the mathematical ones, the others; the John Taine nightmares. They show an obvious leaning toward sadism or homicidal mania. Gore running all over every page. He wallows in it. Naturally, in case of an epidemic of murders, he is the one to suspect. This Eagleson case settles the matter. Eagleson made remarks about his books; in fact, I've heard him. What, then, is more natural than for Bell to include him on his list?"

"Just a second," broke in Yost, "but from the racket outside it sounds like another murder. See you in a few minutes." He left.

Cromley lighted an Oxford Gray. "Wonder what's kept him this long? Almost time for lunch. Wouldn't it be quaint if he'd been killed? But as I was saying, no Japanese bronze work can compare with the best Chinese, even as late as the Manchu dynasty. In fact-here's our man now. Well, who's the jolly old corpse this time?"

"You're cracked," announced Yost, as calmly as ever.

"Really? Fancy that. Why, might I ask?" "About Bell."



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"He didn't kill Eagleson, anyway." "And why not?"

"And why not?" "Couldn't have."

"What about him?"

"Why ?"

"He's one himself."

"One what?"

"Corpse."

"Dead? Ha! Silly, isn't it? Most amusin'. What happened?"

"Somebody just happened to look at the top of the flagpole, and damned if he hadn't been hanging there all morning. Hanged by his own necktie, too."

"Well, well! I always thought they'd be the death of him."

"Who, the Ku Klux Klan?" asked Dean Hinrichs.

"No, his neckties. I say, gentlemen, the problem is getting simpler and simpler."

"Simpler?"

"Certainly. With every killing, the list of possible suspects shortens. Now if we only had a few more —___"

Dr. Yost yawned. "Let's go eat—I know where they sell the swellest blueberry pie."

Dean Hinrichs arose. "Must say I don't feel much like food. By the way, there's to be a faculty meeting at four this afternoon. I forget the room, but you'll find the announcement in the case beside the entrance to the business office. We're going to discuss this massacre. Perhaps the college will be temporarily closed; I don't know. But you'd better come around."

Cromley picked up his cane and gloves. "Well, cheerio, gentlemen. Try not to get murdered. Oh, I say, Mac, I just remembered something * * * * *

Cromley lighted a de Redske. "Damn. Just as I had a beautiful theory worked out, he gets murdered. Such a messy murder, too. Fancy that."

"How was this accomplished?" asked Dr. Macarthur. "You state positively that no one could have put anything into one of Professor Lang's





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head blown off so neatly?"

cigarettes. Yet, how else could he have had his

"Simple enough," drawled Cromley. "I'll tell

you about it as soon as I finish talking about this

fine example of Slavic religious painting. Oh,

very well, Dean Hinrichs, if you're really as anx-

ious to hear about it as all that. And kindly put

that thing back in your pocket. It might go off

and injure some one. Well, now, I believe that

heretofore economics lectures were given in your

Hall of the Humanities. Danby, is that the

name? Well, Dabney. Professor Laing held his

lecture in the physics lecture hall because of the

present uninhabitability of Dabney. Now, you

say that Professor Laing was just lighting his usual

cigarette at the end of the class when the lights

went out; there was an explosion, and when they

put the lights on again the professor's body was

over there behind the demonstration table, but his

head was nowhere to be seen. Now, gentlemen, one

of you glance in the room behind those doors.

Better go around the other end of the desk if you

don't want to get blood on your shoes."

As the deans were about to open one of the doors into the room adjoining the physics lecture hall, the door was opened by a long, thin policeman.

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"S'all right, Mr. Cromley," he said. "We know how it was done already. There's a box with a rubber sheet on one side and a hole on the other that one of the professor guys told us was for shootin' smoke rings. Damn foolishness for professors to be playin' with. Anyhow, there was a couple of them cylinders of gas that had oxygen and hyd-hydrogen in 'em, and they was hooked onto the box, and the box was filled with gas, and when the lights was shut off the guy opened this here door and shot a ring of gas at the dead guy's map, and it hit his cigarette an' exploded, and blew the head all to hell."

"Correct," admitted Cromley. "And has the monumental intellectual acumen of your honorable body resulted in the apprehension of the culprit?"

"The monumental-monu-what-say, what's the matter with my body? Say, who the ----"

"Oh, sorry, no offense intended. I merely asked if you had caught the murderer."

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"Oh. Nope."

"Then I advise you to have a look at Dr. Soare's office. He never approved of the late deceased's—I mean the latest deceased's—materialistic and hedonistic viewpoint. And kindly don't ask me to tell you what that means in words of one syllable. By the way, have you seen a cut of the latest painting by Albrecht Von ——" but Hinrichs had gone.

Ten minutes later Dr. Yost strolled in. He appeared not only cheerful; he positively beamed. The deans, seeing the look in his eye, braced themselves for the worst. "Dr. Millikan?" said Dr. Macarthur in a low voice.

"No." A shadow crossed the chemist's face.

"Who, then?" "Soares." "Soares?"

"Soares!"

"Well, well, Soares." "Soares."

"How?"

"Cremated."

"How cremated?"

"Steam plant furnaces. Somebody pushed him in. Fortunately there was enough left to identify him. A fountain pen, for instance."

Dean Hinrichs pulled out his watch. "It's almost time for faculty meeting. We'd better go while there's any faculty left to meet."

As they started for the door, Cromley caught Hinrichs' arm. "Have you still that pistol?" he whispered.

"Why ?"

"I'm going to put a stop to this."

"What do you mean? Why?"

"By shooting the murderer."

"But who?"

Cromley pointed toward Yost's retreating back, at that moment passing out the door of the lecture hall.

"Him?"

"Yes, quick, or you may be the next. Ahthanks, old thing." He ran on tip-toe out after Yost. At the head of the stairs he paused to lean over the railing and peer down; then trotted down himself. At the bottom he stopped short

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and put the pistol back in his pocket hurriedly. He had almost collided with Dr. Yost, the rest of the faculty, sixty-eight policemen, and five disheveled youths whom he recognized as the Junior Travel Prize men: Jacobs, Gregory, Alden, Kinsler, and Peterson. The tall, thin policeman stepped in front of Cromley with a grin. "Yeah, we just now caught 'em plantin' a bomb under the faculty meetin'. They evidently figgered to make a good job of it this time and get the whole crowd. They've confessed to all the other murders, too. Claim the requirements here are so easy that all the loafers in the country come here, and it's no distinction at-tall to graduate here no more. Faculty wouldn't jack up the requirements none to keep out what they call the riff-raff, so they get sore and start out to clean up on the

faculty. Well, Mr. Cromley, thanks a lot for your help. Dunno what we'd 'a done without you." He passed on.

Cromley stared after him uncertainly for an instant; then pounced upon a nearer victim. "I say, Dr. Watson," he began, "I just ran across the most amusin' thing. An original water-color by Sakatabaki. Yes, really. Fancy that. Oh, sorry; must you? Well, see you some time when you're not so busy." He edged thru the crowd to the east entrance to Bridge. Outside, he lit a Herbert Tarreyton. "Yokels," he muttered, and strode down the walk toward California Street where his huge Minerva limousine was parked, agleam in the last rays of the bleak Pasadena winter sun.





The Big





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MILLWORK SPECIALISTS

A real executive is a man who can hand back a letter for a third re-typing to a red-headed stenographer.

Mencken puts so much stuff in his magazine about morons that we often wonder if he isn't neglecting some of his other subscribers.

This country really has several good five-cent cigars. The only trouble is that they cost fif-teen cents.—James L. Dilley.

We're convinced there's a little Scotch in us. We never take aspirin for a toothache without wishing we had a headache, too.

A negro girl went to a bank regularly to draw her weekly pay. She could neither read nor write, so made an X on the receipt. Then, one day, she made a circle.

"What's the matter, Mandy? Why don't you make an X as usual?" asked the cashier.

"Why," Mandy exclaimed, "ah done got married yesterday and changed mah name."—Tit-Bits.

When a roadster has a wreck in a college town, it's just pure luck if ten or fifteen of its occupants are not injured. Sunday School Teacher: Who was the mother of Moses?

Little Mary: Pharo's daughter.

S. S. T.: But she only found him in the bullrushes.

L. M.: That was her story.-Whirlwind.

He looked at the picture on his desk. What a build! What curves! What everything! With her delightful coloring and sleek appearance, she was really a smooth thing. And above all, she looked as though she would be easy to handle. That, alone, was enough to make any man desire her. Yessir, the old company was sure putting out snappy cars these days.

She had a million dollars. She was pretty and she loved him. He loved her, and for a time it seemed that nothing could come between them. But the usual question arose. Could he be happy with a wife who had a million dollars? It worried him. She begged him to forget the money, but he was poor and he knew that he could never be happy with a million dollars. There was a sad parting scene and, though it broke his heart, he knew that he had done the correct thing. Two months later he married Dolly. She had five million dollars.—*Rankin*.



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Wife (telegraphing back immediately): Same here. George is not so bad.

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There: Not especially, but I would like to become his son-in-law.

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1932 (telephoning Salvation Army): Say, do you save fallen women?

He: Darling, I must have you. I can't do anything without you.

S. A.: Yes.

1932: Well, save me one for Saturday night.

She: Well, you've been sitting there all night and haven't done anything with me either.

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PASADENA

×

One: So Marge is going to marry her engineer?

Mary: "Jack knows more dirty songs than any fellow I ever knew."

Two: Yeah, she had a weak moment and let him torque her into it.—*Pointer*.

Jane: "How do you know?"

Mary: "He whistles the tunes."-Mirror.

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[219]



In most cities a hotel bellboy shows you to your room, turns on the light or lights, raises the shade or shades, and says: "Is there anything else?" But in New York, a bellboy shows you to your room, turns on the light or lights, raises the shade or shades, and says: "Scotch or rye?"

Smart: Fifty bucks to the guy that can guess the answer to this, My brother is seventeen years old; how old will he be one year from today?

Dumb: Eighteen. Pass the fifty?

Smart: Go on. You didn't guess that-you knew it.



He: "Don't go! You are leaving me without reason."

She: "I always leave things as I found them."

Rastus: "I tell you, I done found out de difference between men and de women at last."

Sambo: "What-what is it?"

Rastus: "Wall, a man'll gib two dollars fer a one dollar thing that he wants an' a woman'll gib one dollar fer a two dollar thing she don't want!"

-Drexel Drexerd.

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.

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"He's a fraternity man."

"How do you know?"

"He answered to four names in class this morning."—Ski-U-Mah.

"How's your Math?" she asked. "Good," he replied, "How's your Anatomy?" "I think you're horrid," she exclaimed. —Lemon Punch.

Ben: "May I have the last dance with you?" Mary Lou: "You've just had it."

Dean H.: "Why are you so far behind in your studies?"

Davie Z.: "So I can pursue them better."

Young Bride: "Sweetheart, the grocery stores were closed today, but I made you some nice bean soup out of some jelly-beans I got at the confectionery."—Voo Doo.

"What a charming baby! And how it does resemble your husband!"

"Gracious, I hope not! We adopted it." —Penn. Punch Bowl.

Co-ed: "Why do you call your car 'Flapper'?" Ed: "Streamline body, swell paint job, quick pick-up, all kinds of speed, keeps me broke, warms up quick, and is always ready to go."—*Bobcat*.

Father (coming unexpectedly to his son's frat house: "Does Mr. Brown live here?"

Senior: "Yes, bring him in."

-Tennessee Mugwump.



[220]

"Can your girl fry eggs? "Don't know, never had her that hot." —Moonshine.

Old Greek: "Well, bud, how did you find the initiation?"

New Greek: "Didn't have to find it. Just stooped over and there it was."—Octopus.

"Going to the dance?"

"I can't, I have a case of bronchitis."

"Bring it along. We'll drink anything."-Dirge

"You say I'm a peach, but that's odd, because my mother and father were a pair."

Professor (at U. C. L. A.): "This examination will be conducted on the Honor System. Please take seats three apart and in alternate rows."

Occidental: "The girl I marry must have a sense of humor."

Cal Tech: "Don't worry, she will."

Girls are like final examinations—they keep a fellow up all night worrying about them, and then ask the most foolish questions.

Cat: "Why was I fired?"

Nip: "You know too much."

Cat: "Then I suppose you have a lifetime job." —The Gargoyle.

She (after extra heavy date): "And can you really love me?"

He: "Ye gods, woman, what's your idea of real love?"—Old Brew.

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"Take your girl home last night?" "Naw, I left her at her house."—Phoenix.

Doctor: You'll be dead by morning. Eskimo: Hmm, three months more, by gosh. —Octopus.

If there's another war we recommend that the government appoint a drug store soda fountain clerk as director of meat conservation.



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wrestler as he threw his opponent.

PASADENA

TELEPHONE STERLING 1123

He courted and forgot. She went to court, forgot not, and got lots.

"Youth must have its fling," said the young the only sound investment.

Her lover won her back—So I'll try to win her hand.

Salacious Sally says that she can't discover what is so invigorating in bread, as it is just one loaf after another.

She: "I think those carolers are just divine." He: "What?"

She: "I said those carolers are wonderful."

He: "What did you say?"

She: "I say I like those carolers."

He: "What's that?"

She: "The carolers—I think they're very fine." He: "Oh, hell; it's no use. I can't hear you with all that damn singing going on!"

-Pennsylvania Punch Bowl.

Since the stock market crash, radio seems to be e only sound investment.

"Here I've been starting my letters 'Mon Dieux' for years thinking I was chic, and it doesn't mean 'My Dear' at all!"—Brown Jug.

Men fall in love, but women control the process.

Nit: "Do you work in the shirt factory?" Wit: "Yes."

Nit: "Why aren't you working today?"

Wit: "We are making nightshirts this week." —Washington State Cougar's Paw.

His Lordship (to servant): "Jarndyce, I've just had a tiff with my wife—will you slam the door?"—*Iowa Frivol.*

"Sa-ay, who's the cheap low-down bum who swiped that Hotel Ritzbomb towel I brought in here with me?"—Illinois Siren.

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- Mar. 1—So depressed by the newspapers today that I went out and bit several dogs and shot a couple of city editors.
- Mar. 3—A cute little chorus baby told me that she never went anywheres without her mother, but (tee hee) her mother would go anywhere. When she gets out of the hospital, she's going t'miss Mamma.
- Mar. 5—Ran into Joe today and asked him who he was working for now. "Same old outfit, wife and four kids," laughed Joe. The firm lost a good man.
- Mar. 6—Caught myself laughing at an illustrated joke in a magazine, which so worried me that I went out and got drunk. The next time, I'll visit a brain specialist.
- Mar. 7—A friend of mine asked me to write him stuff for a Talkie skit. When I showed him the script he said, "It's no good, you know. It's never been used before!" Neither had the nice little thirty-eight.

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- Mar. 8—A guy pulled that line about "it not being his face, that he was just breaking it in for a friend." Anyhow, I finished breaking it in.
- Mar. 9—The way that I keep picking off these stock market gagsters, pretty soon Wall Street will have no worries about petty speculators.
- Mar. 11—Somebody yelled, "There goes Walter Winchell!" in a night club the other morn. I must have missed him because I noticed his column appeared as usual today.
- Mar. 12—Absentmindedly shot a boot-black. I thought he was going to sing a Mammy number.
- Mar. 13—And so John said, "I'm a little hoarse, I slept in a livery stable last night!" And you guessed it, dear diary, he's sleeping elsewhere tonight.
- Mar. 14—For a long time I've been willing to sell that car of mine for a song. Still have it, 'cause the song was never sung right. —ed. graham.

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[223]



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"How much does the doctor charge?" asked Abie.

"Five dollars for the first call," replied his friend, "and three dollars for each call thereafter."

Half an hour later Abie entered the doctor's office and gave this greeting: "Good morning, Doctor, I'm back again."—Longhorn.

Salesman: "Crew neck, mister?" Athlete: "No, not while we are in training." —Harvard Lampoon.

College Prexy (awakened by phone from deep sleep at 3:00 a.m.): "Hello?"

Voice: "Is this the president?"

Prexy: "Yes."

Voice: "Well, what are you doing up this late?"—Pomona Sagehen.

Magistrate: "Are you sure he was intoxicated?" Policeman: "No, sir, not positive, but his wife says he brought home a manhole cover and tried to play it on the phonograph."



"Out of my way, wretch—I'm riding to the hounds."

"Give us a lift—I'm going to the dogs myself." —Lehigh Burr.

"Can you give me a sentence using the word 'Christmas'?"

"Sure, Xmas the spot where the body was found."—Brown Jug.



Fourth Down and One to Go

[224]





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"Gee, but that kid's clever. He's only three and he can spell his name backward."

"What do they call him?"

"Otto."-Notre Dame Juggler.

Hi-hat (just back from shooting in Scotland): "We had some wonderful shooting!"

Dim-wit: "Oh, yes! Whatja shoot?"

Hi-hat: "Mostly pheasants."

Dim-wit: "They certainly do give the lower classes a rotten deal over there."—Yale Record.

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"Is that Rudy Vallee or do we need a new needle?"—Harvard Lampoon.

The drunk tottered along the curb. Several times he stumbled off into the gutter. Each time he clambered back on the sidewalk. He did this for several minutes, finally stopping and exclaiming, "This is a pretty damn long stairway."

--- Dartmouth Jack-o'-Lantern.

Big Sister's Beau: "I'll give you a dime for a kiss."

Modern Younger Sister: "Hell, I can make more than that taking castor oil."

-Ohio State Sun Dial.

Drunk (bumping into lamp post): "Excuse me, sir."

(Bumping into fire hydrant): "Excuse me, little boy."

(Bumping into second lamp post and falling down): "Well, I'll just sit here until the crowd pas-h-es."—Hulla-Baloo.

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[225]

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Interior view of the beautiful Chapel of the Good Shepherd, 195 Holly Street, TErrace 4156. With its potted plants, ferns and candelabras it makes an ideal place for weddings.

Haughty Lady (entering sea-food market): "My man, three two-pound lobsters, if you please."

Fish Man: "Yes, ma'am, shall I wrap them up?"

Haughty Lady: "I think you had better, my man. I don't believe they know me well enough to follow me home."—*Colgate Banter*.

Ye Union Man (to prospective suicide): "Don't kill yourself."

Prospective Suicide: "And why not? Have you a job for me?"

Ye Union Man: "No, but we're boycotting the undertaker this week."—U.S.C. Wampus.

"I can't marry him, mother; he's an atheist, and doesn't believe there is a hell."

"Marry him, my dear, and between the two of us we'll convince him that he's wrong.

-Orange Peel.

Little Willie mean as hell Pushed his sister in the well. Said his mother drawing water, "Ain't it hard to rear a daughter?"

Little Willie with the shears Lopped off both of baby's ears. Mother raised her eyebrows slightly To see the baby so unsightly.

Eating more than he was able Little Willie died at table Little sister began to beg, "Can I have Willie's other egg?" —Alabama Rammer Jammer.

Co-ed (at baseball game): Oh, look, we have a man on every base!

Another Co-ed (also unfamiliar with the game): That's nothing, so has the other side.

-Texas Ranger.

Antony: "Is Cleopatra at home?" Servant: "Yes, but she's in bed with peritonitis." Antony: "I never did trust those damn Greeks." -Cornell College Ollapod.

Heard in a Church

Priest: "And give us this day our daily bread-" Ex-Waiter: "White or rye?" -Cornell Widow.

Tightwad (after purchasing newspaper): "See here, boy, what's all this you're yelling about-'Big Swindle; 160 victims'? I don't see anything about it in this paper."

Newsboy: "Hey, read all about the big swindle; 161 victims!"-George Washington Ghost.

> He pulled a boner, did Owte Lowd; He took a mountain for a cloud. -C.C.N.Y. Mercury.

"Say, Ikky, how's your companionate marriage coming along?"

"Not so good. I lost my wife's address, and I can't remember what her last name is."

-Rice Owl.

WESTMORE 4477

Mixie: "A friend of mine fell asleep in the bath tub with the water running."

Trixie: "Did the tub overflow?"

Mixie: "Nope, luckily he sleeps with his mouth open."-1919.

Prof: "Can anyone give an illustration of nothing?"

Soph: "Yes, sir; a bladeless knife without a handle!"-Illinois Siren.

"Well," said the salesman, "I hope the stockings come up to your expectations."

"Sir!"-George Washington Ghost.

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What thx hxll kind of a typxwritxr is this? I will nxvxr ordxr by mail again. As you can sxx thx silly machinx has no lxttxr "x," you know thx fifth lxttxr in thx alphabxt. I am sxnding it back immxdiatxly and if I don't sxx my monxy back in thrxx days, you will hxar from thx bxst lawyxr in Grxxnx County.

> Ebxnxzxr Jonxs. —Yale Record.

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She: "I wish they would move that pole out	
of my way. I can't see them dance."	TErrace 5194
He: "That's no pole, that's a Lithuanian." —Penn State Froth.	
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Lulu: "She was the gas man's daughter."	¥
Belle: "Well, what's that got to do with her character?"	
Lulu: "Meter in the cellar."—Lehigh Burr.	60 North Lake Ave Pasadena, Calif.
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[230]



It is alleged that the Maxwell House Coffee people are packing parachutes with their coffee to satisfy the demand of their aerial trade. Their motto will remain intact, "Good to the Last Drop."—*Pitt Panther*.



"Listen, you little so-and-so. In about a minute I'm going to hit you so hard it'll rock your grandfather in his grave!"

"Stop! His ashes are in that valuable vase on the edge of the mantel."—*Pitt Panther*.



Scott looks dry . . . but



IS HE?



U-				C
	Pasadena T & Storage BETTER SE	e Co.	King Band Instruments EPEREN Everything the Onster more name or on the conster or on the conster on the conster on the conster on the conster on the conster on the conster on	Popular Sheet Music
	55 South Marengo	WAKEFIELD 6131	Pasadena's Leading Band a 117 E. UNION ST.	

"Maybe she's reading a book." "Na, she can't read." "Well, then, maybe she's writing a book." -Columbia Jester.

I: "H'lo, ish isha offish?"

II: "Yes, sir."

I: "Hey- awful thunnerstorm outside. Awful. II: "Yes, sir, it is bad."

I: "Well, I wanna change my dinner order. Do' want turkey any more. Sen' up flounder, an -an-flapjacks."

II: "Sir?"

I: "Flounder an' flapjacks, I say. I'm eatin' dinner unner the bed .- Yale Record.

Mrs. Cohen: "Oh, Abie, Abie, you've been telling smutty jokes again; your hands are all dirty." -Pennsylvania Punch Bowl.

He: "Oh! That's my foot; please get off." The Strap-Hanger: "Why don't you put your foot where it belongs?"

He: "Don't tempt me, madam."-Judge.



Padre: "Still running around with that little brunette of last summer, son?"

Hijo: "Why, Dad, she's married now." Padre: "Answer me!"-Pelican.

"Have you any social prestige?"

"Not a drop."-Tennessee Mugwump.

On the eve of their execution an Irishman, a Scotchman, and a Jew were asked if they would like any special delicacy. The Irishman voted for Irish Stew, the Scotchman for a bottle of whiskey, and the Jew fancied strawberries and cream.

"But," protested the warden, "strawberries are not in season."

"Vel," retorted the Jew, "I can vait."

-Judge.

Maid: "Where is Dr. Jekyll? The collector is here for another payment on the radio."

Mrs. Jekyll: "He's down in the cellar Hydeing."-Wisconsin Octopus.



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PASADENA, CALIF.

Prof (in a lunch wagon): "Two eggs." Big Mike: "Ova?" Prof (ashamed): "Sure. Ova Gallinea." —Ohio State Sun Dial.

The value of the ability to "bull" was illustrated recently when a Yale student passed the wrong

The Puritan maid got put in the stocks for smiling at her lover during church.

examination .- Yale Record.

The modern maid gets put in the tabloids for shooting hers at the altar.—M. I. T. Voo Doo.

WHAT IS LOVE?

Love is when a girl wearing a long white dress will ride to a formal in a fellow's rattle-trap, moth-eaten, dust-laden, topless automobile.

Sharp: I wanna buy a hat. Flat: Would you like a Homburg, sir? Sharp: Naw, I ain't hungry, I just wanna buy a hat.—*Iowa Frivol*.



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PASADENA

WAKEFIELD 7852



[234]

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WAKEFIELD 4767

"How are all the little pigs down on the farm?" "Fine. And how are all the pledges at your house?"—Ohio State Sun Dial.

Evolution: Rags make paper, paper makes money, money makes banks, banks make loans, loans make poverty, poverty makes rags.

-Drexel Drexerd.

Correct

Professor (in Engineering class): "What's a dry dock?"

Student: "A physician who won't give out prescriptions."—Drexel Drexerd.

"I want to see the captain."

"He's forward, miss."

"That's all right, I've been out with college boys."-Wisconsin Octopus.

Prof (taking up quiz paper): "Why the quotation marks on this paper?"

Frosh: "Courtesy to the man on my right, Prof."—Lion.



I hear your son is a model student. Yes, but not a working model.

"My brother is living in Chicago and says that he is delighted."

"What? Delighted to be living in Chicago?" "No. Delighted to be living."

-Georgia Cracker.

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LOS ANGELES, CALIFORNIA

Visitor (gazing at campus buildings): I think your porticos are very well shaped.

Co-ed: Yes, that's what all the fellows tell me, but you needn't get so familiar.

-Black and Blue Jay.

IMPRESSIONS OF THE PROM (Before)

Soft, low lights . . . Soft, low music . . . gleaming shirt fronts . . . immaculate tuxedos . . . charming co-eds . . . shimmering, rustling silk . . . "Satisfied" . . . Glamour . . . Falling in love.

DEPRESSIONS OF THE PROM

(After)

Wrinkled, dusty tuxes . . . headaches . . . Bromos . . . Soiled frocks . . . Smudged collars . . . Stocking runners . . . Aspirin . . . Acrid odors of cigarette smoke . . . Empty pockets . . . "Look What You've Done to Me" . . . Falling out of love. "There is just one thing that men thirst after." "What's that?"

"Peanut butter."-Harvard Lampoon.

EARLY BIRD

Dean (addressing a lazy student): Have you been up before me since the beginning of this term?

Student: I don't know, sir. What time do you get up?—Longhorn.



Prof.: Is that your cigarette butt on the floor? Stude.: You can have it, sir. You saw it first.



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WHITFORD FLOWER SHOP Across from the Strand Theatre

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HE WAS ONLY HUMAN

She was an extra, going from studio to studio looking for odd bits of work. She was a beautiful-blonde, slim shaped, lips that just ached to be kissed. She was a thing of beauty. He was a movie director, a big man in the movie world, sophisticated, mundane. He appreciated beauty. This was the first time these two had been out together. They were out in his car parked on one of the innumerable roads that lead away from the city.

The girl looked into the director's eyes. "Bert," she said softly. "You don't mind if I call you Bert, do you-you attract me so. You are so big, so masculine. I must kiss you."

She leaped into his arms and kissed him again and again. Oh, the ecstasy of those kisses! It stirred up the blood of the director. Such kisses as these he had never known. He smiled at her. "Cut," he said. "We'll take that scene over again."-U. of S. Calif. Wampus.

"How about that Ford roadster parked on the Pi Beta Phi front lawn all during vacation?" "These college men will get into such ruts, you

know!"-Arizona Kitty-Kat.

NOT AT ALL BAD

Maiden: When is this new riffle you were telling me about coming off?

Another One: Shh! Not until I change for dinner.-Zip'N Tang.

Arch Optimist-the fellow who sailed on the same ocean liner with Greta Garbo in hope that there would be a shipwreck near a desert island.

SUCCESS

The operation for the rejuvenation of youth has been performed on the seventy-year-old patient. As he comes from under the influence of the ether, he begins to weep bitterly.

A kind faced nurse bends over him. "Don't be distressed," she says comfortingly. "The operation is a complete success in every detail. When you leave here you'll be feeling ever so many years younger."

But the old man only continues to wail, the tears rolling down his cheeks and losing themselves in his white whiskers.

"Don't cry," pleads the nurse. "The pain you feel now will soon pass away."

"I'm not crying because of the pain," explains the disconsolate one between his racking sobs. "I'm afraid I'll be late to school."

-Northwestern Purple Parrot.

HOTEL VISTA DEL ARROYO & BUNGALOWS ON THE BANK OF THE ARROYO COOLING SUMMER BREEZES OPEN ALL YEAR and SPECIAL SUMMER RATES and PASADENA, CALIF.

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BROOME'S COLLEGE INN

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Opposite Pasadena J. C.

PASADENA, CALIF.

Oh: I heard your party was all wet. Kay: Yeah, the music got so hot that it started the automatic sprinkler system.

-Ala. Rammer-Jammer.

First Drunk (hanging out window): Ish you a crack shot?

Second Ditto: No. I'sh not.

First Drunk: Funny. Yoush just hit two people. —Cornell Widow.

"I sure fixed Tommy. He'll never copy again." "How did you do that?"

"Simple. He used to copy all my answers. I thought I would teach him a lesson, and consequently in the final exam I put down the wrong answers. He copied them and flunked the course."

"Gee, that's great, but how did you get through?"

"Gosh, I never thought of that."

-U. of S. Calif. Wampus.

"I'm engaged to be married and I've only known the girl two days."

"What folly!"

"Ziegfeld's."-Northwestern Purple Parrot.

"I see the new police commissioner's still cleaning up."

"How can you tell?"

"He just brushed by."-N. Y. Medley.

"Have a good time, Bill, and let her conscience be your guide."—Northwestern Purple Parrot.

FAMOUS WORDS FROM HISTORY

Dewey at Manila: Shoot the works, Gridley. —Ga. Tech. Yellow-Jacket. Compliments of

HOTEL MARYLAND

PASADENA

FAIRY TALE

The beautiful girl and the honorable man, sole survivors of a wreck: he had saved her, managed to get on a desert island and there for three long years they lived in hope—she growing daily more beautiful, he daily more honorable.

At last she could stand it no longer. "It looks like we are going to spend the rest of our lives here," she said coyly one day. "Don't you think we might—might be more friendly?"

"All right," he answered eagerly. "I've been longing to ask you if you'd care to play twohanded bridge with a set of cards I've made out of palm leaves."—N. Y. Medley.

TO THE LAST

Farmer: An' how's Lawyer Jones doin', Doctor?

Doctor: Poor fellow! He's lying at death's door.

Farmer: That's grit for ye—at death's door an' still lyin'.—Drexerd.

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1930

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THE ORCHID

PHONE TERRACE 4709

GREEN AT MADISON

Head Librarian: Young man, we are about to close the desk; is there anything you would like to take out?

Frosh: Well, yes. How about the tall one in the tan dress--Juggler.

He: I don't see how you got into that formal. She: Darned right, you can't.—Purple Parrot.

He (romantically): If I could only talk as I feel.

She: Don't; I hate rough language.-Puppet.

She: I avoid chewing gum and cigarettes.

He: I don't chew cigarettes either.-Wampus.

This month has passed I should be glad This month has passed But I am sad This month has passed Ah, sad my lot This month has passed But I have not. —Purple Parrot.

Prof.: I will not begin today's lecture until the room settles down.

Voice from the rear: Go home and sleep it off, old man.—Black and Blue Jay.



"No, you can't take my daughter out riding!"

"Why not, sir?"

"Aren't you a college student?"

"Hell, no. I work over to Kelly's pool hall." "I beg your pardon. My daughter will be ready in a moment."—Orange Peel.

A parasite is a person who goes through a revolving door without pushing.—Yale Record.

Customer (in drug store): I want a little pink tablet.

Druggist: What's your trouble?

Customer: I want to write a letter.

-Orange Peel.

Teacher: If you subtract fourteen from a hundred sixteen, what's the difference?

Johnny: Yeah; I think it's a lot of foolishness, too.—Orange Peel.

Missionary (horrified): You say you ate your own father and mother? Why, that means you're a cannibal!

Black Boy: No; an orphan.-Lampoon.

She: Why do you call this coo-coo coffee? He: 'Cause it's a little weak in the bean.

-Longhorn Ranger.

HOME GROWN

One of our sociology professors was conducting a private social investigation on the outskirts of the city. "Do you think it healthy to keep your dogs in the house?" he asked the head of a numerous family.

"Waal, I don't know," drawled the other; "I've been keepin' my dogs in here for nigh on fifteen years now, and I ain't never lost one of 'em yet."—Longhorn.



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WAKEFIELD 6222

CIT

LAKE AND CALIFORNIA

MATTHAEI PHARMACY (Say MATTHAY)

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HELPING HANDS

After you have taken the wrong detour at the crossroads.

"Well, I had a feeling—half an hour back that this wasn't the right road. I only hope it gets wide enough so that we can find a place to turn before it gets dark."

"I thought you'd been over this route. Gee, and I left the gas stove going full blast!"

"Sure, this *may* swing around and hit the main stem again, but when? About next Tuesday, if you ask me!"

"Well, what if Fred Munkelt *did* tell you to turn left here? You ought to know by now that he's got no more sense of direction than a cat in a bag!"

"You know, these roads aren't getting any smoother, and this bus isn't any Duesenberg any longer. There's a kind of a funny flat 'slap-slap' noise that I don't like every time we smack a bump."

"Why didn't you get a good map, anyway? This haphazard business of relying on filling station men and hot-dog boys makes me tired! We're apt to be stuck out here 'til midnight now.

-STANLEY JONES.

"Where did you get that black eye?"

"Told the conductor I was traveling on my face, and he punched the ticket."

-Ga. Tech. Yellow Jacket.

1st Flapper: Have a cigarette? 2nd Flapper: No, thanks—it's getting so dark that you can hardly see the smoke.—*Yale Record*.

Then there was the Dumb Dora who wanted to go to the moon, and when she heard it was two hundred and fifty thousand miles away or the equivalent of ten times around the world, bought ten round the world tickets.

-Pitt Panther.

1930

The Whole Country Went in for These College Elections

Best All-Around Man-Paul Whiteman.

Most Likely to Succeed-Al Capone.

Most Popular with Women-Rudy Vallee.

Most Promising Writer-Calvin Coolidge.

Funniest—Calvin Coolidge. Best Dressed—Jimmy Walker.

Most Observant-Walter Winchell.

Talks Most-Graham McNamee.

Favorite Sport—Talking about how much money he lost in the stock crash.

Californian: This gin and orange juice is lousy! Who's your bootlegger?

Floridan: It's not the liquor—it's these California oranges I had to use.—*Pitt Panther*.

She: Bill, I like your new suit.

He: New suit! You mean my wardrobe. First Party: Well—turn around and let me see your wardrobe.—*Rice Owl*.

"Did you hear the latest about that film actress?"

"No, what is it?"

"Her secretary didn't keep the records straight, and now she finds she has had two more divorces than she's had weddings."

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TWO WALTER WINCHELL FANS

"Where were you last Sateve?"

"I was Gilbert-Garboing with my new flame, Molly."

"What! It seems as only yesterday that you were welded to Sarah."

"Oh, that's been Reno-vated."

"Has your new flame in money?"

"Her pappy is pediculous with it."

"I guess you and she will be ankling up the middle aisle soon."

"Heheheh."

"Well, good luck and may all your troubles be blessed events."

"What kind of car has Frank?"

"Well, he'd feel tremendously flattered if you called it second hand."-Buffalo Bison.

"Sandy doesn't play his approach shots right." "I know, but he just hates to chip in." —Stanford Chaparral.

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LAKE AND CALIFORNIA

PASADENA, CALIF.



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Lady Visitor: My, this smoking-room is beautifully arranged.

Sorority Sue: Yes, if only we were allowed to use it.—U. of S. Calif. Wampus.

This business of abolishing hazing is tough on some of the sophs. It seems to take all the joy out of the life of a soph if he can't haze a freshman—and it certainly takes most of the kicks out of a freshman's life.—*Boston Beanpot*.

"That fellow's driving his car so carefully that I think he must be a new driver."

"No, he just paid cash for the car." —Michigan Gargoyle.

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GRIMM'S LAST FAIRY TALE

Out of the storm-swept night a pall of horror fell on the ghostly mansion. Banging shutters and creaking stairs sent queer sounds through the eerie rooms and hallways. Suddenly a shot rang out—a gurgling scream, and then only the distant howling of dogs. A secret panel opened and an ape-like figure slipped from its shadows. With a thud, a headless body struck the staircase and rolled to the bottom. A door on the floor clock opened and a skeleton slid out. From the moldy cellar came the sound of fingernails scratching on coffins. For an instant a beam of light fell on a hideous face. Then a blood-spattered chandelier plunged through the floor. Lon Chaney was spending a quiet evening at home.





I can hardly hear myself think. You're not missing anything.

"What did the prexy say after he refused that drink at the professor's reunion?"

"'No thanks, Mack. I've got to have full control of my faculties at all times.""

-Penn. State Froth.

University of Virginia: Edgar Allan Poe was one of America's finest men.

Cooper Union: Why, he was drunk all the time.

U. of V.: Well. That's just what I said. —Cornell Widow.



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HE BLUSHES

He was such a big, green, overgrown proposition that we thought he ought to see the town. He blushed when we told him jokes, kept his eyes turned the other way at the football games, always tipped his hat to a lady and didn't care for hot love stories. So we loaded into a taxi cab and started down to Gipsy Jim's. We had a round or two and then to our astonishment he looked up and said hello to the bartender as though he meant it, and the fellow replied likewise. When we got outside Goofy spoke up and said, "How does it happen that you knew that fellow?"

"Dew yew mean Jim? Why, I worked for him all summer there."—Pitt Panther.



Female: Are you yawning?

Male: No. I'm giving a silent version of an Indian war whoop.

Prof: And who was president of the United States during the Civil War?

Frosh: Why, er, Abraham Cadillac. —U. of S. Calif. Wampus.

Alumnus: Got two tickets you'll sell? Student (who heard last year's game in jail over the radio): No, but I'll give you two, if you'll remember me on my birthday.

Alumnus: And when is that? Student: Today.—U. of S. Calif. Wampus.

Modern Version: Don't you dare talk to me in that movietone of voice.—*Minn. Ski-U-Mah.*



WILSON Football Equipment

We're football enthusiasts! You'll find selecting the right equipment for yourself or your team made as easy as possible.



He: Why are so many men going to the Hawaiian Islands this summer?

Him: I dunno! The grass crop was a total failure.—Zip'N Tang.

The beautiful Spanish morocco slide-rule cover goes to J. Edmund Van Lloyd. He has not been heard to say "Oh, yeah?" or "Sez you!" during the past semester.—*Carnegie Tech. Puppet*.

Lady Passenger: Does this car stop at the President Hotel?

Conductor: No, ma'am—we leave it in the sheds at night.—Colgate Banter.

W. P. FULLER & CO.

040

Paints - Varnishes - Lacquer Wall Paper - Glass

3

PHONE COLORADO 3173





Son: Ma, what's the idea of makin' me sleep up here every night?

Mother: Hush, Bobby, you only have to sleep on the mantelpiece two more weeks and then your picture will be in a *Believe-it-or-Not* cartoon. —*Colgate Banter*.

Shoeman: Well, here are your shoes all soled. Where's the money?

Scotchman: Yes, where is it? Your sign says, "Shoes soled while you wait for one dollar." I'm still waiting for that dollar.

-U. of S. Calif. Wampus.

The holy compact of marriage has more than once been broken up by a less holy and more concrete compact in the coat pocket of a supposedly tired business man returning from his club. --Colby White Mule.

Dollar-a-word magazines seem to have solved the problem of what to do with our ex-Presidents.

Salesgirl: And what kind of step-ins would you like to buy, sir?

Customer: Like those the girl sitting there is wearing.—Grinnell Malteaser.

IGNORED INVITATIONS

"This offers you the opportunity to please someone you love with a generous and gracious gesture. Dorgan's—the largest department store in town invites you to open a charge account for your wife. Think how thrilled she'll be when you tell her. 'Darling, you have a charge account at Dorgan's!' Often a woman sees a lovely ensemble or a smart Parisian turban, only to discover, to her dismay, that she hasn't enough money in her purse to purchase the coveted articles. But now your wife will suffer no such disappointment. Now she may buy whatever appeals to her. Just sign the enclosed card and a charge account will be opened for her today."

-Arthur L. Lippmann.

"Doctor, why do you call that girl 'snake bite'?" "As soon as I saw her I cauterize."

Gunman: Put your hands up, or I'll shoot. (Drunk raises one hand.) Gunman: Get 'em both up.

Drunk: Hic-It's all right-I'm half shot already.-Cornell Widow.

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A patient who complained of digestive troubles was told by a specialist that he was drinking too much and would have to knock it off.

"Well," said the patient, "what am I to tell my wife?"

The doctor thought for a few minutes and then said, "Tell her you are suffering from syncopation. That will satisfy her."

The patient did as he was told. "What is syncopation?" asked his wife.

"I don't know," said the husband, "but that is what he said."

When her husband had gone out the wife looked up the word in the dictionary and found it meant "Irregular movement from bar to bar"! —*Tit-Bits*.

Judge: Have you anything to say in your own behalf?

Defendant: No, Your Honor. Those beautiful women on the jury, however—I mean the wonderful, youthful, graceful . . .

Lawyer: I object, Your Honor.

Defendant: They are beautiful women, and I . . .

Judge: It's no use—we may as well dismiss the case right now.—The Pathfinder.



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"You have just heard The Sudsy Soap Syncopators play 'At Dawning.' Whether it's afternoon, night or at dawning, you'll always find a wash with Sudsy Soap most refreshing."

"Glen Glycerine and his Sudsy Soap Syncopators have just finished a fox-trot version of 'By the Waters of the Minnetonka.' Sudsy Soap makes a heaping, foaming lather in any kind of water, hard water, soft water, tap water or the waters of the Minnetonka."

"That old favorite, 'Dirty Hands, Dirty Face,' was just played for you by The Sudsy Soap Syncopaters under the direction of Glen Glycerine. There's nothing better for dirty hands or a dirty face than a thorough washing with Sudsy Soap."

"The final selection played by The Sudsy Soap Syncopators was 'Mighty Lak a Rose.' If you will use Sudsy Soap morning, noon and night, you, too, will be mighty lak a—___'"

-HUGH WOOD.





HEBSE BIRKEL MUSIC BIRKEL MUSIC BIRKEL MUSIC Ado-448 SO. BROADWAY

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OLESS than the thrill of the winning touchdown of the Big Game, the perpetuation in pictorial form of the bright memories of college days in this yearbook depended on teamwork. As the engravers of this volume, we have been happy to work shoulder to shoulder with the staff in the teamwork so necessary to put "*it over*."



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LOS ANGELES

"Wake up, Bill, there's a fire on the Row." "Fraternity or sorority?" "Fraternity." "Let the damn thing burn."

-Washington Dirge.

"How boring?" is said to be a common question in a small arms factory.

"Yeh, that bunch of low caliber guys!" -Arizona Kitty-Kat.

Prof (taking up quiz paper): Why the quotation marks on this paper?

Frosh: Courtesy to the man on my right, Prof. -Lion.

IT WAS JUST ANOTHER FASHION Man: That's a pretty dress you have, dear. His Boss: Dress? That's my winter coat! -Notre Dame Juggler.

"I believe this school is haunted." "Why?"

"They are always talking about the school spirit."-Wet Hen.



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KERCHKOFF LABORATORY OF THE BIOLOGICAL SCIENCES

The Kerckhoff Laboratory of the Biological Sciences, which is the most recent addition to the Institute campus, has brought to Southern California, and to Pasadena particularly, a group of the most eminent investigators of the biological and allied sciences. The existing building constitutes the first unit of the group which is soon to occupy the corner at San Pasqual and Wilson Avenue, and where research in general physiology, genetics, biophysics, biochemistry, development mechanics, and perhaps later experimental psychology, will be conducted.

The climatic conditions in Pasadena have been found to be unusually favorable for this work, and many extremely important and difficult problems are being studied.









The Big

Appreciation

When I accepted the Editorship of the Big T of 1930, I hoped to make it an all-campus publication. In trying to place before the student body as fully as possible a picture of life on the Institute campus this year, I had the good fortune of having a both competent and willing staff. To its members goes the chief portion of the appreciation which an annual editor has the pleasure of expressing. No matter how quickly the work was to be completed, no matter how arduous the task, those who worked with me were always faithful to the book. Throughout the school year the production of the annual was entirely in the hands of the staff with myself acting as guide in its development and watching the progress as a whole.

To the Geology Department of the Institute I owe appreciation for much technical and critical advice on the authenticity of the subject matter of my theme, Human Evolution, although any technical errors in material must not be laid to its door. To Mr. John Maxson goes my particular appreciation for his description of the different stages of Man's development. Because of the staff's co-operation I found myself in a position to spend much time with Harry Alter of Bryan-Brandenburg Company whose artistic representation of the material so truly expresses the feeling which it was my desire to present as the theme of this book.

The Engraving and Art Work by Bryan-Brandenburg Company, the Printing by Western Lithograph Company, the Photography by Austin Studios, Covers and Binding by Coast Envelope and Leather Products Company will all speak for themselves.

Last but not least, I wish to express my appreciation to the student body at large for giving me an opportunity of offering to it this book which I hope will meet with approval.

F. S. SCOTT,

Editor of Big T 1930.



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