

# ALUMNI REVIEW

CALIFORNIA INSTITUTE OF TECHNOLOGY



*Edison R. Hoge*

## SEMINAR WEEK-ENDERS

SEE PAGE 3

Vol. 2 No. 3

MARCH 1939



## Why Dad! Do YOU Question the Future?

**D**AD may question. During his lifetime he's seen electric lights replace oil lamps; the widespread installation of sanitary plumbing and central heating. He's seen the growth of the automobile and the radio; the development of the airplane, the motion picture, and the electric refrigerator. Dad, somewhat like the Patent Office official who, long before 1900, is said to have resigned because he thought all the worthwhile inventions had been made, sometimes finds it difficult to share his son's enthusiasm for the future.

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# ALUMNI REVIEW

ALUMNI ASSOCIATION, INC.

CALIFORNIA INSTITUTE OF TECHNOLOGY

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MARCH, 1939

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WE FIND, through examining the activities of several institutions, that alumni-campus relationships cover a wide range of interest and service. There are endowments, scholarships, funds and memorials; joint publications and publicity bureaus; home-comings, intense liaison in athletics, and all manner of social events; world-wide chapter organizations, booster clubs, and arrangements for contact of freshman candidates; and many unique or unusual programs, some of which are highly meritorious.

The Alumni Association of California Institute of Technology has, rather than follow any stereotyped pattern, adopted a program compatible with its own particular membership and the alma mater of its members. There is an astounding sparsity of ballyhoo. There is almost complete freedom from dictatorial tradition or precedents of long standing which have become unwieldy; longevity is to be honored, yet it is found that pathfinding is simpler for a young group such as this. Costly or elaborate financial ventures are quite unknown but will likely take some conservative form in future years. Other features will undoubtedly be added as warranted by desires and needs. Meantime, the keynote of group participation for mutual and

individual advantage is of positive value.

The placement service has done much toward finding needed employment. It has succeeded in supplying qualified candidates for specified requirements. It has endeavored to locate suitable positions for men who wish to transfer their services into other fields or who find it advisable to side-step for greater opportunity for advancement or recognition. Those close to the placement service realize existing limitations of contact with both potential employers and employees. They would welcome discussion and advice as to possible improvements or extensions of service.

The seminar week-end is in itself a triumph of alumni-campus relationships. It is a purposeful social event. It is a meaningful session for the dissemination of fact and principle. It is a fitting tribute to the genius which inspired it, and a satisfaction to those who participate.

Education is a continuing function. In this rapidly moving period which demands the bulk of a man's time for productive work (engineers apparently have not yet been confronted with the problem of leisure) it is difficult to keep abreast of developments in one's own profession and is more difficult to be up-to-date in related fields. The seminar week-end is proving its worth.

### FORTHCOMING EVENTS\*

**C.I.T. Exhibit & Open House Apr. 14-15**  
afternoons and evenings.

Annual Stag & Field Day . . . May

**Bakersfield Chapter . . . June 6**

**C.I.T. Commencement . . . June 9**

**Annual Meeting & Homecoming . . . . . June 9**

**Special Conclaves of Classes 1934, 1929, 1924, etc.**

For Chapter dates see your Chapter Secretary (listings on page 65 of the Directory).

\* Listings in bold face type are definite. Specific data regarding other events will be announced upon completion of plans.



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# SEMINAR WEEK-END

## ALUMNI GATHER FOR SOCIAL- EDUCATIONAL EVENT

### *THE SEMINARS IN RETROSPECT*

By H. FRED PETERSON, '27,

*Publicity Chairman of the Committee*

The Second Annual Seminar Week-end of the Alumni Association is history, and as such has more than repeated the success achieved by the first Seminar a year ago. The sincere delight with which Alumni attended the series of events organized for their benefit was expressed on all sides. The only regrets which were uttered were that individuals were not divisible cells which would have permitted attendance at more than one lecture simultaneously.

For many years the idea has occurred and re-occurred in the minds of the members of the various Boards of Directors of the Alumni Association that some form of Alumni education should be developed. Last year the seed took root and under the efficient and meticulous care of Clarence F. Kiech, '26, the Seminar week-end sprang into being, a full-grown healthy institution with a definite purpose to fulfill. This year, with the precedent of a successful Seminar as a guide, an attendance of some 530 Alumni and guests enjoyed a program of exceptional interest and merit.

The ideals and policies so carefully outlined by Kiech were carried on with enthusiasm by Ted C. Coleman, '26, in managing the Second Seminar. The continuance of the cooperative spirit between Faculty and Alumni contributed again to the spontaneous feeling of goodwill and fellowship with which the speakers addressed their appreciative audiences. Coleman carried on and amplified all the original tenets of the Seminar, particularly that which provided that the Alumni themselves were to choose the subjects and the speakers, assuring a combination of cultural, scientific and technical topics which would be of intense interest to all Alumni. In this principle, Dr. Robert A. Millikan and his entire staff cooperated willingly and completely and earned the sincere appreciation of all who attended.

It was with distinct pleasure that Alumni were shown that the various Faculty members participating in the Seminar so obviously enjoyed greeting their former pupils. From the many remarks made it seems that Prof. George R. MacMinn may have expressed the views of all the Faculty when he said at the close of the Humanities Seminar, "We are happy to have you come back . . . it is an inspiration and does us a tremendous amount of good."

The luncheon arrangements were excellent and the Alumni owe much to the efficient management of the Student Houses. A record crowd of over 300 were fed a first-class meal in time to appear on the front steps of Throop Hall for a group picture prior to the afternoon session.

The registration of around 450 men was accomplished in an hour and a half by the efficient staff organized by Loys

Griswold, '25. No confusion existed and it was a pleasure to witness the cheerful feeling of friendship prevailing throughout Dabney Hall as the men streamed in to acquaint themselves with the details of the plans made for their enjoyment. Harold C. Hill, '11, as official greeter, lent valuable assistance in steering Alumni and their guests to the proper rooms for registration.



*Kinsey congratulates Coleman.*

After absorbing quantities of weighty and thought-provoking ideas all day Saturday, some 250 found it delightful to adjourn to the Annandale Country Club and relax amid refreshments prior to dinner. Dr. Millikan made many an Alumnus aware of the passage of the years as he twitted them with "looking for all the world like a group of bank directors . . . with thinning hair and receding foreheads . . . and expanding girths." However, his words of genuine welcome to Alumni more than offset the nostalgic memories of the abundant hair and slim waists of undergraduate days.

"We are never too old to learn" might easily be accepted as the theme of the Alumni Seminar. The eagerness of Tech men to absorb once more the teachings of our Alma Mater, to sit again at the feet of our old Masters and to listen to the words of the newcomers on the Campus is an inspiration. All those who gave of their time and energies to make the Second Annual Seminar the smashing success that it was, certainly have felt repaid a thousand times for their labors. And if the prolonged, enthusiastic applause given to the speakers at the conclusion of their talks was not an indication of the appreciation and gratitude of the audiences, let these

few words sum up the heart felt thanks to the Faculty of Caltech that every Alumnus feels for a stimulating feast of ideas and learning. Four big rousing cheers for Dr. Millikan and his entire staff, and au revoir until 1940.

EDITOR'S NOTE: In order to provide a brief of the Seminar transactions for those who were unable to attend, and a record for those who did attend, the following reports are furnished. The willingness and effort of the men who undertook these reports is much appreciated.

— T —

### **"What Is Unique About The California Institute of Technology?"**

PROF. WILLIAM B. MUNRO

*Reported by* GEORGE RICE, III, '31

Following a welcome by Ted Coleman, chairman of the Seminar, Ed Kinsey introduced Prof Munro who spoke to a throng which taxed the capacity of Culbertson Hall.

Speaking on unique phases of the Institute's ideals, Prof. William Bennett Munro reminded us that admittance of freshmen is only by examination — with room for only about one-third of those who pass the tests. This "selection" eliminates many of the disciplinary measures necessary in most colleges.

Using new facilities "to do the present job better" rather than expanding classes and curriculum, or running extension courses or outside activities, is an important aim at the Institute. Another unique feature is the inclusion of humanities subjects in the first five years of technical courses for more than one-fourth of the student's work and the broad basis of general science in undergraduate courses to make for more flexibly-trained men. Finally, Prof Munro differentiated between classwork conducted as a "sight-seeing tour" and that at the Institute on an "exploration party" basis, which instills the spirit of research into the undergraduates.

— T —

### **"Three Dimensional Weather Forecasting"**

PROF. IRVIN P. KRICK

*Reported by* KARL E. HEGARDT, '32

One of the largest groups of the Seminar week-end met in Culbertson Hall to hear a very interesting illustrated lecture on the latest methods of weather forecasting.

Dr. Krick showed slides to illustrate his theory and also motion pictures of cloud formations speeded up to many times normal. One unusual shot showed clouds forming out of a clear sky over the Sierra Nevada Mountains due to the rapid ascent of a moist air mass with resultant expansion of air condensation of moisture. An illustrated explanation of the New Year's flood of several years ago was also presented.

This new method of weather forecasting is based upon a knowledge of the direction and speed of movement of the different types of air masses which are constantly migrating over the earth's surface. In order to obtain these data, simultaneous observations of barometric pressure, humidity, temperature, and prevailing air movements are taken at many observation points and at various altitudes.

During stormy weather when airplanes are grounded, the information is obtained by sending up small balloons equipped with radio transmitters which automatically relay observational data to ground instruments. This information is then used to study the movements and types of air masses, and on this analysis the forecast is predicted.

The methods of long-range forecasting were described by Dr. Krick in the December, '38, Alumni Review, hence are not repeated here.

— T —

### **"Chemical Experiments in Petroleum"**

PROF. WILLIAM N. LACEY

*Reported by* FREDERICK S. SCOTT, '30

Dr. William N. Lacey, professor of Chemical Engineering, discussed the relation of the Institute to the petroleum industry, pointing out that this industry is the largest single employer of Tech men and that graduates, particularly in the chemical and mechanical engineering fields, gravitate to the oil companies. It was shown that the Institute cooperates with the petroleum industry in many research projects notable in such fields as thermodynamic properties of hydrocarbons, organic chemical research, asphalt corrosion protection, study of metals used in the industry and the like. The industry cooperates with the Institute in supporting this type of research, in offering summer jobs to undergraduates, and in accepting as adequate the type of fundamental scientific and engineering training which has been adopted as a policy in the Institute's educational program.

— T —

### **"Hormones and Vitamins in Plants"**

DR. JOHANNES VAN OVERBEEK

*Reported by* WILLIAM T. TAYLOR, '22

Biological engineering is so new a branch of engineering that the Tech alumnus of five years standing has hardly even heard of it, yet Dr. Johannes Van Overbeek's lecture on "Hormones and Vitamins in Plants" gave a glimpse of the plant side of this new science.

Hormones, those chemicals produced in minute quantities (in the order of fifty parts in a billion) by plants and circulated in the plant structure, have a profound effect on plant growth. Take a growing erect plant, bend it to one side, and the new growth will start in the vertical once more. This phenomenon is now known to result from the unequal concentration, due to gravity, of hormones in the inclined portion of the plant.

Auxin, a hormone, stimulates root production. Replanting of eroded areas is expedited by dipping cuttings of shrubs or trees in auxin, driving them into eroded slopes while they are moist; the cuttings take root, the plant grows, and erosion is checked.

Root growth is started by hormones but continued growth is stimulated by vitamins, especially B<sub>1</sub>. Indications now are that best results are obtained by starting rooting with auxin, then plant stimulation with vitamins B<sub>1</sub> and Nicotinic acid.

Vitamins are produced in plants in widely varying concentrations (average about 100 times hormone concentration). Slow growing plants, i.e., camellias, orchids, etc., have few vitamins. Experiments show normal rate of growth can be speeded by feeding vitamins.

Valuable discoveries have been made during the ten years since this research project was started but most important, only now are we beginning to know of the mysteries of plant growth and the enormous scope of the research.

For those who want to know more, see the book "Phytohormones" by Went and Thimann.



## "Germany and The European Situation"

PROF. J. E. WALLACE STERLING

Reported by BEN BENIOFF, '22

In a lecture packed full of interest, Professor J. E. Wallace Sterling presented a picture of central and south-eastern Europe that attracted more than passing interest. He started out by relating the historical background of the present "Greater Germany" movement, which is in fact one hundred and twenty-five years old. Except for a brief interlude during the regime of Bismarck, the Iron Chancellor, this Pan-Germanic idea has been the goal of the German ruling party. Bismarck acted somewhat as a "break" to this movement, through advocating a strong, self-sufficient, "Small Germany."

With this interlude, the situation with rapidly changing aspects, was brought right up to the present. The loss of the World War by Germany merely postponed the inevitable. Hitler as the master of Europe holds the peace of the world in the palm of his hand. His next move is always unpredictable. One thing, however, stands out: his word means nothing, his promises and treaties are made merely to be broken. Should he stop now, peace will remain for a while but if, as some predict, his appetite has merely been whetted, then almost anything can happen as borne out by current news reports.

## Electrical Seminar

Reported by M. W. EDWARDS, '26

Professor R. W. Sorensen, assisted by Dr. MacKeown, discussed the trend of electrical engineering education starting with the early days of the arc light and multiple lighting systems. Engineering was mostly cut-and-try until 1905 when complex quantities began to creep into electrical calculations.

The first long transmission lines were calculated by use of complex quantities and it was not until 1915 that hyperbolic equations were adopted for this work. Little or no change in calculation methods were noted for the next fifteen years. In 1930 operational calculus was applied to solving transient problems and symmetrical components were advocated in place of complex quantities.

By means of symmetrical components, any unbalanced three phase system consisting of three vectors can be resolved into three sets of balanced vectors, that is, positive sequence, negative sequence and zero sequence.

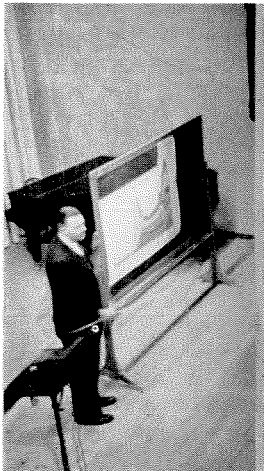
Lately, tensors have been creeping into our engineering calculations. Tensors greatly simplify the solving of network problems where a great mass of calculations have to be made.

In the future, engineering graduates will need five years of college with more courses in physics and mathematics.

In expressing views on the question of "Public vs. Private Ownership" Professor Sorensen said that in a professional way the engineer should not take sides, but, as a citizen, one should feel free to express his views openly in an economic way.

Dr. MacKeown discussed the improved efficiency of fluorescent lighting. Fluorescent lighting is about three times as efficient as incandescent lighting because the ultra violet light, normally not seen, is made visible by using fluorescent materials inside inert gas filled tubes. Also laboratory experiments in the generation and transmission of ultra high frequencies of wave-lengths less than one meter were discussed. Such methods may eventually be used for television and high frequency power transmission.

(Continued on page 12)



*A Quest for Knowledge — A Splendid Reunion — Profitable Memories in the Making.*

# INSTITUTE STAFF MEMBERS RECOGNIZED IN AMERICAN MEN OF SCIENCE

*Comparative Institutional Listings Disclose*

*C.I.T. is outstanding.*

Soon after 1900, Dr. J. McKen Cattell, the psychologist, began collecting data for a statistical study of the conditions, performance, traits, etc., of a large group of men of science. So many biographies of living scientists were collected that the idea suggested itself of publishing this material as a reference work similar to *Who's Who in America* but limited to those who were working in the natural, exact, and applied sciences. The result was *American Men of Science*, published in 1906 and containing about 4,000 biographies. This compilation proved to be so useful that it has been revised and enlarged in subsequent editions, the last of which, published in 1938, contains about 28,000 entries.

Besides demonstrating the extraordinary increase in the number of workers in the general field of science, the successive editions of *American Men of Science* have provided a reasonably objective means of evaluating the quality of scientific work done at various educational institutions. In the first edition Dr. Cattell wished to designate the 1,000 students of the natural sciences whose work was considered to be the most important. Ten leading students in each science were asked to arrange in order of merit the names of their coworkers, and the 1,000 were distributed among the sciences in proportion to the total number of workers in each science. The designation was made by prefixing a star to the subject of research. In the more recent editions the practice has been followed of starring, each time, 250 additional names, to designate those men who, since the previous edition, have emerged as the most promising workers in their respective fields. The system of selection has been broadened until, in the 1938 edition, several thousand men of science took part in choosing the names which were to be starred. With such a choice, representing the opinion of men who are qualified to judge, the 1938 edition of *American Men of Science* furnishes sufficient data for an interesting comparison between the California Institute and other institutions which are fostering scientific research.

Mr. Stephen S. Visher, in the October number of the *University of Chicago Magazine*, has printed a table of the total number of starred scientists now at leading universities. His figures follow: Harvard, 68; Chicago, 46; Columbia, 41; California, 39; Yale, 35; Princeton, 33; Hopkins and Michigan, 30 each; Cornell and Minnesota, 26 each; California Institute, 22½; Illinois, Massachusetts Institute, Pennsylvania, Stanford, 22 each; Wisconsin, 19.

A more interesting comparison, however, is to be seen in the new names starred in the 1938 edition: Harvard, 17; Chicago, 12; California Institute, 11½; Princeton, 11; Cali-

fornia, 10; Hopkins, 9; Columbia, Massachusetts Institute, Michigan, 8 each.

It is obvious, however, that these comparisons fail to give a complete picture, since they do not take into account the relative size of the institutions involved. Consequently, the following table gives the ratio between starred scientists and total number of teachers. (In each case, the total number of teachers was taken from the current *World Almanac*.)

California Institute	1 to	8.49
Princeton		11.58
Chicago		14.22
Hopkins		19.86
Minnesota		24.77
Michigan		25.33
Yale		25.86
Massachusetts Institute		27.23
Harvard		27.62
Wisconsin		29.95
Stanford		31.41
Cornell		39.23
California		53.77
Columbia		61.61
Pennsylvania		68.54
Illinois		73.59

In the foregoing comparisons, the California Institute and the Massachusetts Institute are at an advantage, since their non-scientific departments have, relatively, less importance in the total activities of the institutions. In order, then, to arrive at a basis for comparison which makes no such discrimination, it is necessary to exclude from the total number of teachers those who are not working in fields where the starring system is used. The final comparison, then, gives the ratio between starred scientists and the number eligible for starring. Computing the number eligible for starring, it must be noted, involves considerable difficulty. In the case, for instance, of institutions which include a medical school, the question arises of whether only full-time members of the staff should be counted. Where any such question occurred, the most conservative and hence the most favorable count was used. Hence, the ratios must be regarded as only approximations.

Princeton	1 to	3
California Institute		3½
Harvard		4½
California		5
Yale		5½



Chicago	5½
Massachusetts Institute	6
Michigan	7½
Columbia	8
Stanford	9
Wisconsin	9
Illinois	12

On whatever basis the comparisons are made, the California Institute emerges in a very gratifying position. This is the more apparent when it is remembered that the development of research in the pure and exact sciences began at the Institute only a little over twenty years ago.

EDITOR'S NOTE: The June issue of the Alumni Review will contain names of men listed in "American Men of Science," together with a detailed analysis by individuals.

## ENGINEERING COMMITTEES APPOINTED BY TRUSTEES

An Engineering Committee composed of men having a special interest in engineering education and research has been appointed by the Board of Trustees of the Institute. Its first meeting was held on January 20, 1939.

At this meeting which lasted throughout the weekend, the Committee made a complete tour of the engineering facilities on the campus and then proceeded to Palomar Mountain to view progress on the Observatory. After dinner at Warner's Hot Springs a round table discussion was held in which members of the Institute faculty participated.

The members of the Committee are as follows:

Garner A. Beckett, President, Riverside Portland Cement Co.

Scott Brown, Member Pasadena Advisory Board, Security-First National Bank of Los Angeles; formerly Vice-President and General Counsel Studebaker Corporation.

R.R. Bush, President, R. R. Bush Oil Company.

Thomas Fleming, Retired Consultant in Water Supply Engineering.

E. T. Foley, Member, Foley Brothers, Inc., St. Paul, Minn., Pacific Constructors, Inc., contractors on the Shasta Dam.

George G. Hoag, Retired, formerly with J. C. Penney Co.

Herbert Holt, '15, Manager, Bekins Van and Storage Company, Los Angeles.

Ralph B. Lloyd, Independent Oil Operator, Director, Security-First National Bank of Los Angeles.

Fred S. Markham, Capitalist.

Reese Taylor, President, Union Oil Company of California; formerly President, Consolidated Steel Corporation of Los Angeles.

William C. Mullendore, Chairman of Committee, Executive Vice-President, Southern California Edison Company.

## ROUSE AWARD

Dr. Hunter Rouse, assistant professor of fluid mechanics, has been awarded the Norman medal of the American Society of Civil Engineers for his paper, "Modern Conceptions of the Mechanics of Fluid Turbulence," which appeared in the Proceedings of the Society. The Norman medal is the foremost award of the American Society of Civil Engineers, and is given each year for the most outstanding paper presented in the Proceedings.

## COSMOCHRON

An interesting exhibit to be found in the Science Hall of the Golden Gate International Exposition is a Cosmochron, or geologic clock. The bronze hand on the face of the clock makes the circuit of "time" divisions, representing geologic periods. While it is ticking, the recorded voice of Dr. Chester Stock, professor of paleontology at Caltech, is heard describing the history of the cosmos, and a series of 42 slides is shown depicting what is known of the appearance of the world, animals and trees in the remotely past eras.

The cosmochron was built at the Griffith Park Planetarium in Los Angeles and will be on exhibition there at the close of the Exposition.

## NEW ADVISER CHOSEN

Dr. Vannevar Bush, president of the Carnegie Institution of Washington, recently accepted an invitation to become a member of the Advisory Council of the Institute. Doctor Bush was formerly dean of engineering and vice-president of the Massachusetts Institute of Technology.

Another recent change was the election of Albert B. Ruddock to the Board of Trustees to fill the vacancy created by the death of Dr. George E. Hale. Mr. Ruddock is president of the California Institute Associates.

## COLONEL LEEDS

Col. Charles T. Leeds, who was Professor of Military Science and Tactics at the Institute in 1917 and 1918, was recently elected a director of the American Society of Civil Engineers, representing the Southwest district for the three year term starting January, 1939.

## EARTHQUAKE EFFECTS STUDIED

The Board of Supervisors of Los Angeles County recently voted an appropriation of \$4,000 to help finance continued research in detailed studies of various types of buildings subjected to earthquake shock. The work which is under the direction of Prof. R. R. Martel, will attempt to determine if present building code requirements should be modified to achieve a uniformity in protection for all kinds of buildings.

## ALUMNI MEETINGS

By JOHN E. SHIELD, '22, and GEORGE LANGSNER, '31

### TECHNICOLOR-N.B.C. MEETING

One of the most interesting and well attended meetings of the Alumni Association was held on Friday evening, January 20, 1939, when Mr. J. A. Ball, vice-president and technical director of the Technicolor Motion Picture Corporation, spoke on the Technicolor process to one group of members, while another group of members visited the new Hollywood studios of the National Broadcasting Co.

The meeting, as originally planned, was to be held in the Review Room of the Electrical Research Products, Inc., in Hollywood, which has a seating capacity of 110 persons. Because of the enthusiastic response to the reservation request, the Social Committee was in a quandary because of its inability to secure a larger meeting place on such short notice, which was solved by Mr. Ball consenting to present his talk to two separate audiences, and the Committee then made arrangements for one group to visit the broadcasting studio, while the other listened to him.

Mr. Ball, who is a graduate of the Massachusetts Institute of Technology, gave a very interesting resume of the historical background of the Technicolor process, and a general description of the methods and problems facing the process today. At the conclusion of his talk several reels of Technicolor motion pictures were shown which provided the lighter part of the program.

The conducted tour of the new National Broadcasting Company studio was enjoyed by those attending, as they were permitted to learn and see at first hand the last word in radio broadcast facilities, with its specially designed and acoustically treated walls, cork insulated floors, and the latest engineering equipment. Another feature was the exhibition of sound effects.

The arrangements for the meeting were made by Sidney Zipsner, '30, of the Technicolor Motion Picture Company.

### ANNUAL DANCE

Only once in a while — once a year lately — do the erstwhile students of The Institute get together with their ladies to trip the light fantastic. The latest such occasion was on February 4th at the Biltmore Ballroom in Los Angeles. 433 couples were enthusiastically present, included among whom were 72 Seniors, who attended as guests. Music was provided by Larry Kent's Orchestra, and entertainment during intermissions by sad-faced Boothe Bertram. The performance of the latter certainly seemed to intrigue those who were close enough to see his numerous styles of headgear and facial expression.

Faculty members present were Prof. and Mrs. Franklin Thomas, Prof. and Mrs. Philip Fogg, and Prof. and Mrs. Ray Untereiner. The success of the affair was largely due to Clarence Kiech '26, Mr. and Mrs. Lawrence K. Gould '33, and Paul C. Schaffner '37.

## MEMBERSHIP EXCEEDS 1,000

By WILLIAM H. MOHR, '29, *Membership Chairman*

The Membership Committee is very happy to announce that there are now over 1,000 members of the California Institute of Technology Alumni Association. Our Association has grown a little each year until this year we have been able to reach our goal.

The activity of all members and their cooperation in making this year a successful one is sincerely appreciated by your Board of Directors. We have endeavored to please you by publishing a Directory of Alumni this year in addition to the quarterly Alumni Review and the numerous meetings that are held for your benefit.

A membership of over 1,000 in an Institution that has less than 2,500 graduates is a record that others might well envy.

## PLACEMENTS

Hal Hill, '11, chairman of the Placements Committee, has recently addressed groups of seniors and a few underclassmen on the essentials of interviews. He has endeavored to prepare these men for personal contacts with potential employers and their representatives, through pointing out good and bad features of appearance and demeanor. Interviews are now being held on the campus by personnel agents of several large firms. It is reported that Hal's advice to some 150 men is standing in good stead.

To alumni, the Placements Committee would like it known that excellent positions are sometimes lost to Tech men just because the right candidate's application card is not on file at the time the call is received. Several openings have gone begging during the past several weeks. If you are interested in improved employment, send your credentials to the Alumni office on the campus, together with mention of salary and type of work desired.

## DIRECTORY

By now you have perused the pages of the 1939 Directory. You have checked your own listings. You have probably discovered that several alumni live or work near you. Perhaps you have already looked up some of them. You have spent some time learning what your classmates are doing. You have probably saved your copy for constant reference.

According to early reports, the Directory is being found of inestimable value, has been studied for an average of about two hours per man. Two thousand man-hours of scrutiny!

The Directory committee tried diligently to provide completeness, accuracy and useability. Since it was impossible to obtain all desired data, due to time and financial limitations, it is now urged that members aid in filling in addresses and affiliations or reporting errors. It is hoped that the Directory can be issued biannually. Meantime, the Alumni Review will endeavor to report changes which qualify for the "News of Classes" department.

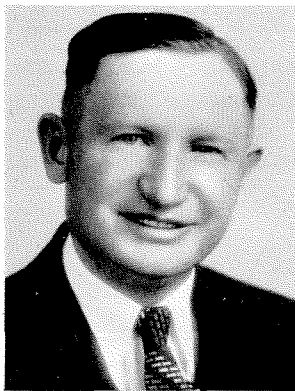
# ALUMNI YOU SHOULD KNOW

## UNIVERSITY E. E. DIRECTOR

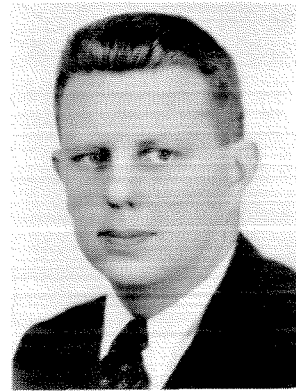
Since entering the Institute in 1922 as winner of a Westinghouse war memorial scholarship, William A. Lewis, Jr., has been known for top-flight talent in the field of electrical engineering. Winner of prizes, participant in extra-curricular activities and outstanding student, he completed work for his B.S. degree (with honor) in 1926; M.S. (with honor) in 1927; and Ph.D. (summa cum laude) in 1929. In addition to his college work at the Institute, Bill rendered valuable service in planning the control system for the Guggenheim wind tunnel equipment and assisting in plans for electrical installations in the Institute buildings.

Entering the employ of Westinghouse Electric and Manufacturing Company, Dr. Lewis soon became an authority on technical electrical problems. During a ten-year period he served in several departments and became a Westinghouse lecturer in electrical engineering at the University of Pittsburgh.

Recognizing his excellent qualifications, the board of trustees of Cornell University recently chose Dr. Lewis to serve as director in the School of Electrical Engineering in the College of Engineering. He received word of his appointment on his thirty-fifth birthday and is thus one of the youngest men ever selected for high administrative office at Cornell. He took office on February first.



DONALD R. WARREN



WILLIAM A. LEWIS, JR.

## HIGHWAY BRIDGE ENGINEER

Donald R. Warren, better known as "Don" Warren, is an outstanding example of an engineer who is always studying and keeping abreast of the times. With years of experience in responsible charge of civil engineering projects, but never having had the good fortune to complete work for his degree he took time to study, received his B.S. in 1938.

Because Don topped the list on the civil service examination for Senior Field Engineer on the San Francisco-Oakland Bay Bridge several years ago, he was put in charge of all construction surveys, landing of caissons in tidal water (often a mile off shore), alignment of suspension bridge cables, and the linking together of the many units which form the \$77,000,000 double deck bridge across San Francisco Bay.

As reward for the work done on this famous bridge, Chief Engineer C. H. Purcell last year placed Don in charge of all state bridge construction in Southern California. All bridges, grade separations and structures on 6,000 miles of state highways are under his supervision.

Some of the other engineering projects on which Don has served in a responsible capacity are: The deep water piers for the San Mateo-Hayward Bridge across San Francisco Bay, the development of the theory of incursion and control of salinity in the Sacramento-San Joaquin Delta, the construction of Big Meadows Dam and many other projects.

Don takes an active interest in the activities of the American Society of Civil Engineers and the Structural Engineers Association. Although a busy man, Don will always greet with a smile any reference to his alma mater, the California Institute of Technology.

## WHAT'S NEW ON LIFE MEMBERSHIP?

Historically speaking, our present Caltech Alumni Association LIFE MEMBERSHIP PLAN is just about four years old. The Association, by unanimous consent of its membership in 1935, voted an amendment to the then existing Constitution to permit members to buy a Life Membership. The same provision was carried over in the Articles of Incorporation.

Briefly here are the main points of this plan: By payment of \$50.00 in one sum a fully paid Life Membership card is issued. Payment of \$11.00 for five years or \$6.00 for ten years will provide the means of acquiring a Life Membership on an installment basis. Thus the plan has been made available to every Tech Alumnus regardless of his economic situation. The money received by the Association is deposited with the Institute and interest only can be used by the Association for its general expenses. On the installment plan when a member fails to meet his annual payment he merely loses his membership for that year but may resume payments in the future without penalty.

This plan was the outgrowth of lessons learned during the late unlamented depression. When times get hard members readily drop out of such organizations as Alumni Associations. However, those are the times when such Associations are needed most of all, i.e. the Placement Service work. By using this long range, reserve building program, the bump from any loss of members can be softened. It is estimated that the cost of getting each annual membership runs between 35 and 50 cents. This cost is of course lost motion for it must be repeated each year. The Life Membership plan can eliminate that loss and insure persistency of membership in the Association. In brief, the Association with a large reserve fund from Life Members, could be in an enviable position with sure economic status and effective expenditure of funds.

Results to date, we believe, have justified the wisdom of the Plan and established its practical value. At present there are forty-nine fully paid Life Members and fifty-six on the Installment Plan. The spread in classes represented runs from 1898 to 1937. In fact, every class from 1920 to 1937 has at least one Life Member. Approximately 10 per cent of the current memberships are subscribers to the plan. The results obtained thus far were mainly the efforts of solicitations made during the first two years of the plan's existence. Efforts are now being made by the Board of Directors to revive the popularity of the plan.

Naturally the Board of Directors would like to see you a Life Member if you have not already signed up. Yet what could such a plan have in it for the individual alumnus? First of all, there never would be any more duns mailed to you for dues; you're in for good. (NUISANCE VALUE). Secondly, the cost of annual membership is bound to advance as the organization grows, and by means of this plan you can peg the cost of Alumni Membership to you

at the present low level. (ECONOMIC VALUE). Thirdly, your bit toward establishing a permanent, financially sound organization that can be depended on in good and bad times is unquestionably done for all time to come. (SENTIMENTAL VALUE).

A DEPOSIT OF \$6.00 IS ALL THAT IS NECESSARY TO START — RESOLVE TO DO YOUR STARTING IN 1939.

— T —

## NEW GRADING SYSTEM

Two important changes in the grading system at the Institute have been made during the present school year. The numerical system has been replaced by the more widely used alphabetical system and the meanings of the various grades has been changed.

Whereas in the past a grade of '2' denoted average and a grade of '1' denoted below average, under the new system 'C' denotes satisfactory work though below average and a grade of 'D' denotes unsatisfactory work though still counting as '1' in the old system for computing grade points.

The main advantage in the system is that it eliminates the impression that a great number fail because of the necessarily large number of students who are below average.

Because of the almost universal use of the alphabetical system, it is more easily understood by prospective employers, as comparisons can easily be made with grades received at other colleges and universities.

Under this new system fewer blue slips at mid terms have been given students than were issued in previous years.

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## STARS MAY SHINE UNSEEN

Astronomers cannot prove it, but they strongly suspect that there are stars in the sky which, although shining, cannot be seen, according to a report by Dr. Fritz Zwicky published in a recent issue of the *Astrophysical Journal*.

This seeming paradox would come about if the stars were of extreme density and so possessed an enormous gravitational force, which would act strangely on the light these stars might emit. This force would do two things, according to Doctor Zwicky. It would slow up the light from these stars so that rays would take an infinitely long time to reach an external point, and even if it did arrive, would reach the external point without energy and thus be impossible of detection.

Such stars would be of a type called collapsed neutron stars and would represent the lowest states of energy which matter could possess without turning into radiation. This concept was postulated to explain the outpouring of radiant energy which supernovae possess for their brief period of brightness.

Doctor Zwicky has discovered eight supernovae or exploding stars while working with the Schmidt telescope at Palomar Mountain, one of them being the brightest star ever observed.

## THE SCHMIDT TELESCOPE

*A Revolutionary New Astronomical Instrument*

By ALBERT W. ATWOOD, JR., '32

One visiting Palomar Mountain's broad meadows might be amazed to discover another large telescope housing. This is the future home of the little publicized forty-eight inch Schmidt telescope which astronomers hail as the greatest advance in the past fifty years. It is likely that the Schmidt will achieve fame in advance of the 200-inch telescope itself.

The feature that makes the Schmidt telescope of such outstanding value is its wide field of vision. For example, the Schmidt will be able to photograph the entire visible heavens in about two years, requiring only about 1,000 plates to accomplish this; on the other hand, it would take the mighty 200-inch telescope more than 1,000 years and 100,000 photographic plates to make a complete map of the heavens. Hence it is readily understood that the wide-eyed Schmidt will be of inestimable value in discovering the points of interest on which to turn the penetrating eye of the 200-inch telescope. The Schmidt in its own right is expected to make many important discoveries. Even the little 18-inch Schmidt which Dr. Fritz Zwicky has been using for the past year on Palomar has made world wide headlines by its discovery of super novae. The ability of the Schmidt to photograph the entire heavens down to the 20th magnitude within a couple of years is most remarkable when one recalls that the combined efforts of the 60-inch and the 100-inch telescopes on Mt. Wilson have succeeded in mapping but 1½ per cent of the heavens in the years since they were constructed.

The Schmidt telescope is composed of a spherical mirror with a thin correcting lens and is the discovery of a one-armed German optical technician. Unfortunately, Bernhard Schmidt died in Hamburg in 1935 before discoveries were made with one of his instruments that would have made him famous.

Astronomical authorities agree that the Schmidt telescope is the greatest advance in recent years and its wide, quick eye will be of great value in permitting a highly efficient use of the great 200-inch telescope.

— T —

## MOST PAINFUL NERVE DISEASE

Relief for sufferers of tic-douloureux, a nerve disease so painful that it has driven some of its victims to suicide, is in prospect as a result of an apparently successful clinic conducted at the Institute which was announced recently by Dr. Henry Borsook who has been associated with Dr. M. Y. Kremers and Dr. C. G. Wiggins in conducting the research.

The disease, one of the two most painful that ever assails mankind, is marked by excruciating pains that shoot through the face in lightning-like spasms. The treatment used is the administering of ten times the normal requirement of Vitamin B by mouth and injection. In a month patients begin to feel

relief from pains with a marked freedom from pain occurring in another month. While fine results have so far been obtained, it is not yet certain that cures are permanent.

— T —

## IN MEMORIAM

OGIER

Walter W. Ogier, Jr., '19, died suddenly on December 28, 1938, in Pleasantville, N. Y., at the age of 42, after having been ill for several days of appendicitis.

At the time of his death, Mr. Ogier was vice-president of Pure Carbonic, Inc., a subsidiary of the Air Reduction Corporation, which absorbed the Nu-Ice Company of Pasadena, owner of patents for the production of dry-ice developed by Mr. Ogier while an instructor at the Institute.

Mr. Ogier was for many years an instructor in mechanical engineering at the Institute and devoted a great deal of his time to coaching the Glee Club. While an undergraduate, he served as student body president, resigning to enlist in the United States Navy during the World War.

BRIDGES

Dr. Calvin B. Bridges, who has been doing work in genetics at the Institute for several years, died in Los Angeles on December 27, 1938. He was a biologist on the staff of the Carnegie Institution of Washington, and also worked part of the year at the Woods Hole Biological Institution in Washington.

Through Doctor Bridge's work, structural details of Chromosomes were made visible, and his technique made the mapping of genes possible. "In recent years, he spent much time in revising the genetic maps which are the standard ones where *Drosophila* is used. His work here was more than a routine job," according to Dr. Thomas Hunt Morgan, in the last issue of "Science."

INGALLS

Francis Chandler Ingalls, '39, died on February 28, 1939, as the result of an accidental fall at the Pasadena Y.M.C.A. Swimming Pool. At the time of his death he was president of Blacker House, and secretary of both Pi Kappa Delta and Tau Beta Pi chapters at the Institute.

His passing was mourned by the entire student body. Fellow members of Blacker House acted as pall-bearers, and a male chorus from the Los Angeles City College, of which his father, Dr. Roscoe Chandler Ingalls, is Director, sang at the funeral services.

MALEEV

Leonid Vladimir Maleev, '40, died on January 7, 1939, as the result of a hundred yard fall from an icy trail while on a tobogganing party. He was majoring in mechanical engineering, and was an upper class committeeman at Blacker House.

## SEMINAR WEEK-END

(Continued from page 5)

### "Investigating Earthquakes"

DR. C. F. RICHTER

Reported by HARRY MASON, '30

In 1921 the Carnegie Foundation set up funds for a seismological laboratory for the Southern California area. In 1923 the present building on San Rafael Avenue just west of the Arroyo Seco was completed. From that time until the end of 1936 the laboratory was operated by the Carnegie Foundation in conjunction with the California Institute. Since 1937 the laboratory and staff have operated as a part of the Department of the Geological Sciences at the Institute.

Earthquake investigations consist essentially of cataloging local quakes and locating their epicenters and also cataloging distant quakes through cooperation with foreign stations.

Earthquake waves are of two types, longitudinal and transverse. By a determination of the difference between the two waves the seismologist is able to obtain the distance from the point of recording to the center of the quake. The most intense and frequent disturbances seem to border the Pacific Ocean. It has been thought for many years that seismic disturbances occur only to a depth of about 50 kilometers down into the earth's crust but it has recently been demonstrated by Dr. Turner of England that they occur as deep as 500 kilometers, particularly in the South Pacific and South America and also in the Japanese Island group.

Dr. Richter concluded his remarks by stating that the recurrence of earthquakes in any area previously shaken is as sure as next winter's rain, but the time of recurrence is as yet unpredictable.

The energy in a strong shake is  $10^8$  to  $10^{17}$  ergs.

### Chemistry Seminar

Reported by FREDERICK S. SCOTT, '30

Under the chairmanship of Prof. Linus Pauling the chemistry group was appraised of the latest developments in Chemical Research at the Institute. Prof. Swift reviewed his new system of qualitative and semi-quantitative chemical analysis which has recently been published and has received favorable reception in both industrial and institutional chemical laboratories. The new developments in separation and determination of the various anion constituents was described in some detail.

Prof. Lucas discussed the recent work on the Walden Inversion with particular reference to organic coordination complexes. Particular emphasis was placed on recent developments at the Institute relative to the optical activity of butane derivatives.

An experimental demonstration of the chromatographic

analysis methods was given by Dr. Winstein who pointed out the wide spread industrial applicability of this type of separation. The method consists essentially of depositing various fractions of a complex mixture of organic materials on a filter bed, by varying the solvent power of the solvents employed in the filtering operation.

### "New Experiments in Nuclear Physics"

DR. WILLIAM A. FOWLER

Reported by ERNST MAAG, '26

Dr. Fowler first showed in what ways the nuclear system is different than either the atomic system or the solar system and because of these differences the new approach needed for investigations.

He also pointed out that because of the size of the particles involved they could only be studied by breaking down the system by excitation of its parts and studying their effect on other observable particles. The methods used make the system unstable through addition of energy by radioactive substances, cyclotron, transformers and condensers, or by electrostatic generators. Dr. Fowler used many slides to illustrate the equipment for these methods.

The particles given off are made observable by an electric counter or by a cloud chamber. In the cloud chamber each particle, for instance an electron, positron or alpha ray makes a distinctive path by the collection of mist on the ionized gas that it leaves in its wake. By a study of such paths in magnetic fields as well as out, much is learned about the particles.

Many interesting slides of tracks in the cloud chamber were shown. Dr. Fowler also conducted experiments with both the electric counter and cloud chamber showing how they work.

### PROF. MAX MASON

The keynote of Dr. Mason's profound yet entertaining discourse was, as he describes it, a study which dwarfs all others through its importance — the application of pure science to the biological and neurological makeup of individuals. He maintains that the role of science in the problem of human behavior not only opens new frontiers of learning but will ultimately be the point of differentiation between successful conduct of individual or collective human affairs and an unsound or chaotic structure of mankind.

Dr. Mason is chairman of the Observatory Council and member of the Executive Council of the Institute. He was president of the University of Chicago, 1925-1928, and has been president of the Rockefeller Foundation from 1928 through 1938.

EDITOR'S NOTE: It is regretted that space does not permit reports on several seminars which were among the most interesting of all. Copy is being held for the next issue.

## TAYLOR CALDWELL'S NOVEL *DYNASTY OF DEATH*

*A book review by Assistant Professor*

ROGER STANTON

*DYNASTY OF DEATH* tells the story of three generations of men and women in two emigrant families, the Barbours and Bouchards, partners in what becomes the greatest munitions and armament industry in the United States. Beginning simply as a small powder company, the organization thrives on the Mexican War of 1848, reaches maturity after the Civil War, and before the turn of the century, with the Bouchards in full control, becomes a power in international affairs.

The action throughout is swift and multitudinous. Verging frequently upon melodrama it is, for all that, kept in hand. And when retribution succeeds villainy, it never depends upon chance; it is invariably based upon some flaw in character.

It is Ernest Barbour who, throughout the novel, holds together the three generations of the two families. A more explicit analysis of his motives might please many readers, but they must rest content with his one, single burst of confidence. The rest is action.

"I've always wanted power," said Ernest. "When I was a lad in school in England, the other lads hated me. I never knew why. I was a quiet little beggar, never ran from a fight, always behaved myself. I was not twisted or crippled or defective, and I had no halt in my tongue. I never lied or cheated, never bothered to. But the lads hated me. Why? I never knew. I don't know now. — I soon saw that if I hadn't the protection of laws those who hated me would soon finish me off. I won't say I didn't care; I did care. Nobody likes to go around feeling like a leper. So in self-protection I hated back. And I've done a good job of it. I've got the thing that's a boot in the face — power." (p. 610)

Ernest does not confine his ambition to business; he is determined to found a dynasty. The Barbours are prolific; so are the Bouchards. Through much intermarriage — not without some tragedy — the family fortunes and the family power alike become impregnable, though not exactly according to Ernest's pattern.

If the chief theme of the novel is irresponsible power with its attendant havoc, a second theme combines heredity and environment with their attendant pranks. Inexplicable characteristics in Ernest make for hate; others quite as inexplicable in his brother, Martin, make for love, though, incidentally, since each is endowed with great energy and willfulness, their hatred of one another is implacable. All Ernest's bad qualities find the widest scope for their fulfillment; all his angelic brother's are blocked by a calloused and greedy society.

The brothers marry cousins. It is as if some of their

children had been exchanged at birth, so unexpectedly do they turn out. One of Ernest's sons becomes a musician, another a religious fanatic; as for Martin's boys, they turn out to be stolid though efficient business men. But for all its neatness, the pattern is not so obvious in the novel as it appears in bare outline.

The third theme that the novel develops is, in a word, armaments, with the attendant topics, nineteenth century exploitation of labor and industrial expansion. Readers of Shaw's *Major Barbara*, or readers of the now celebrated article upon European armaments that appeared in *Fortune* (March, 1934), or any one familiar with the evidence gathered during Senator Nye's munitions investigation will enjoy the pleasure always attendant upon recognition. Readers will think, moreover, that they recognize portraits of a few of the great American industrial leaders of the nineties, the disclaimer of the author's note notwithstanding. Indeed, it is my impression that the tale throughout is based far more upon fact than upon imagination.

It is only fair to state, however, that *Dynasty of Death* does not appear to be motivated either by the muckraker's spirit or by the propagandist's. I believe that the author has made a sincere attempt to present, through action, both the Barbours and Bouchards to the end that to know them will be to understand them. Although there is weakness in the power of analysis, there is strength in the narrative. The novel would be better, in my opinion, if it were shorter; at the same time no one can deny that it moves with great speed. In the end the reader experiences the thrifty sense that he is carrying away something beside the memory of a good story. Taylor Caldwell is a woman, and *Dynasty of Death* is her first novel.

— T —

### COLONEL ADAMS

Col. Lewis M. Adams, U.S.A., (retired), is Port Director of the Nueces County Navigation District of Corpus Christi, Texas. Colonel Adams was professor of military science and tactics at the Institute from 1924 until the R.O.T.C. unit was disbanded. Capt. Joseph Laracy, (retired), is his assistant and is remembered by Tech men as Master Sergeant of Engineers.

— T —

### A PUZZLER

For those having nothing better to do, Mr. Hawks of the Design Division of the M.W.D. recently proposed the following brain teaser. It can be solved but we suggest that you mathematical geniuses try it out before attempting to catch your friends on it.

"The combined ages of Frank and Ernest are 48 years, and Frank is twice as old as Ernest was when Frank was half as old as Ernest will be when Ernest is three times as old as Frank was when Frank was three times as old as Ernest. How old is Frank?"

# NEWS OF CLASSES

Conducted by George Langsner, '31

Have you any bits of news about yourself or fellow Tech men? Marriages, births, promotions, job changes, papers published, honors received are all items of interest to the rest of us so write your information on a penny postcard and address it to the Editor, CALTECH ALUMNI REVIEW.

## 1902

**James M. Gaylord**, who is chief electrical engineer for the Metropolitan Water District of Southern California, is the author of a recent article in the Engineering News-Record describing the pumping installations on the Colorado River Aqueduct and the preliminary tests of the pumps which were made at the Institute.

## 1915

**Earle A. Burt**, who is Maintenance Engineer of the Los Angeles County Road Department, was chairman of the Equipment session of the annual conference of the Asphalt Institute held in Los Angeles early this month.

## 1918

**Frank Capra**, for the third time, received the award of the Academy of Motion Picture Arts and Sciences for his direction of the Columbia Picture, "You Can't Take It With You."

**Edison R. Hoge**, who is on the staff of the Mt. Wilson Observatory, recently addressed the Astronomy Journal Club on "Some Problems in Astronomical Photography."

## 1923

**Elmer L. Smith**, who is assistant engineer of the Pasadena Water Department, was elected vice-president of the Pasadena Municipal Employees Association.

**Paul M. White** is now a member of the firm of White and Wilberg of Santa Monica, who are the contractors for the construction of two bridges in Cajon Pass near San Bernardino for the California Division of Highways.

## 1925

**Frank Clayton** is employed by the California Commission to the Golden Gate International Exposition and is in charge of design, installation, and operation of transformer stations, distribution lines and lighting equipment required by the State's \$5,000,000 exposition building program.

**Markham E. Salsbury**, who has been senior engineer with the Los Angeles County Flood Control District, has been promoted to the position of Senior Assistant Chief Engineer of the District.

**Dr. F. W. Maxstadt, M.S.**, assistant professor of electrical engineering at the Institute, is on a two month's tour of the East visiting the major electrical plants and laboratories and recently constructed projects.

**Carl H. Heilbron** and **William H. Saylor**, '32, who are in the U. S. Engineer Office at Los Angeles are the authors of

a technical paper on arch dams which appeared in a recent issue of the Proceedings of the American Society of Civil Engineers. The studies preceding the publication were made while the authors were employed by the Metropolitan Water District of Southern California.

**Dwight O. Smith**, who is professor of physics at Judson College at Rangoon, Burma, is on furlough and is spending his leave on cosmic ray studies at the Institute.

**Tracy L. Atherton**, of the California Division of Lands, is in charge of the survey of oil lands in Southern California, and his headquarters are in Los Angeles.

**Alfred A. Newton** has been elected a member of the Board of Directors of the Shoreline Planning Association of Southern California.

## 1926

**Joachim Voelker** is the proud father of a baby girl, Elizabeth Anne, born on January 28, 1939, at Victorville, Calif.

**Stuart L. Seymour** is the proud father of a daughter, Marilyn Virginia, born on Christmas Eve, December 24, 1938.

**Jackson C. Baker** is now head of the Lighting Department of the Hawaiian Electric Co., Ltd., with offices in Honolulu.

## 1927

**Archie P. King**, who is with the Bell Telephone Laboratories, addressed the Institute of Radio Engineers at its New York meeting on February 1, 1939, on the subject of "Wave Guide Radiators and Electromagnetic Horns."

**Borice Z. Boris** is employed as an electrical engineer by the California Commission to the Golden Gate International Exposition.

**Theodore Combs** is largely responsible for two manuals on Pre-Cut Framing for Light Frame Walls, just issued by the West Coast Lumbermen's Association, the use of which will make possible a reduction in the cost of home construction.

**Robert T. Ross**, who is assistant professor of psychology at Stanford University, delivered a series of lectures on the "Psychological Foundations of Personality" to students at the Institute during January.

**Hallam E. Mendenhall, Ph.D.**, who is in charge of development work on vacuum tubes for the Bell Telephone Laboratories at New York, was a recent visitor at the Institute.

**Dr. Carl D. Anderson** and **Seth H. Neddermeyer, Ph.D.**, '35, recently announced the discovery, in the course of their cosmic ray investigations, of a new intermediate particle of matter which has been named a mesotron, which corresponds in mass to between 100 and 200 electrons.

**Ray E. Copeland** paid a visit to the Alumni Office recently, while spending a vacation in California. Ray is connected with the Carnegie-Illinois Steel Corporation, Chicago.

**Dr. John H. Maxson** delivered a lecture on "The Rocks of the Grand Canyon" at the annual exhibition of the Carnegie Institution of Washington held last December.

**Robert F. Heilbron** was married to Miss Rose Varni at Yuma, Arizona, on December 28, 1938.

**Louis H. Mesenkov**, who was formerly with the Paramount Pictures Corporation, is now sound engineer for Metro-Goldwyn-Mayer Studios at Culver City, Calif.

## 1928

**Gunner Gramatky** is now general superintendent for the Los Angeles Paving Company; and he has also been elected vice-president of the Los Angeles Post of the Society of American Military Engineers.

**Jack Berman** is a candidate for the office of member of the Los Angeles City Council at the coming municipal election.

## 1929

**George F. Taylor**, who is chief meteorologist for Western Air Express, is the author of a new textbook on aeronautical meteorology recently published by Pitman. The book offers a thorough, scientific foundation for aviation forecasters, emphasis being placed on the study of air masses as the basis for weather analysis and forecasting.

**Knowlton R. Birge**, who is assistant engineer of the Pasadena Power and Light Department, is assisting the Pasadena City Attorney in hearings before the California Railroad Commission on the Pasadena transportation problem.

**Stanley W. Lohman** is responsible for a report on ground water in Pennsylvania recently issued by the State Topographic and Geologic Survey in cooperation with the United States Geological Survey.

**Albert Tyler, Ph.D.**, delivered a paper on the prolongation of the life span of unfertilized eggs of marine animals at the December joint meeting of the Western Society of Naturalists and the Society for Experimental Biology and Medicine which was held at the Institute.

**Thomas H. Evans**, who is assistant professor of civil engineering at the University of Virginia, is the author of a short article appearing in the March issue of "Civil Engineering" entitled "Motion of a Suspended Mass—With Practical Application."

**Walter Grimes**, who is in the U. S. Engineer Office at Rio Vista, Calif., is now an associate civil engineer.

## 1930

"**Tex**" **Hurd**, x '30, reports the birth of a daughter, Carol Ann, who at the fine age of three weeks gives promise to be the someday queen of the Tournament of Roses. Carol Ann was born on March 1st.

**Dr. Josef J. Johnson** is assisting Dr. Fritz Zwicky in making supernova photographs with the Schmidt telescope at Palomar mountain.



**John Gibson Pleasants, M.S., Ph.D., '33**, has been promoted to be the General Superintendent of the Baltimore Division of the Proctor and Gamble Company, having previously been Production Foreman at its Port Ivory plant on Staten Island, N.Y.

## 1931

**Jeff Wineland** was married to Miss Laura Cornelia Williams in Denver, Colorado, on February 17, 1939.

**Victor Neher, Ph.D.**, delivered a talk on cosmic ray tests at the meeting of the National Academy of Science in Washington last December.

**John R. McMillan** has been transferred to Los Angeles where he is in charge of the geological department of the Barnsdall Oil Company.

**Howard Smits** is now sales engineer for the Pacific Iron and Steel Company.

## 1932

**Paul G. Burman** is the proud father of a future varsity prospect, Bruce Gardner, born on December 24, 1938.

**Harold Roach** was married to Miss Charlotte Flax aboard the S. S. Matsonia at Wilmington, California, on December 15, 1938, before sailing to Honolulu for a honeymoon.

**Philip Schoeller**, of the firm of Deuel and Schoeller, is associated as structural engineer with Myron C. Hunt, architect, on the \$400,000 building being erected for the Huntington Memorial Hospital in Pasadena.

## 1933

**Wyatt H. Lewis** is the father of a son, John Wyatt, born on November 13, 1938.

**Robert G. Macdonald** is the father of a son, Robert Childs, born on December 22, 1938.

**Trent R. Dames and William W. Moore**, who have opened offices in Los Angeles have been commissioned by the City of Pasadena to design the Washington Street Bridge across the Arroyo Seco channel, which is the first of several proposed bridges across the improved channel built under the supervision of **Douglas C. MacKenzie**, '22, Assistant City Engineer of Pasadena.

## 1934

**Glen Woodward** was married to Miss Helen Weber of Upland, Calif., on February 4, 1939, and they are now residing in Taft, Calif.

**Paul Roberts** is the father of a son, John Herbert, born on November 29, 1938, at Los Angeles.

**John F. Pearne** was married to Miss Jean Caldwell Macklin in Washington, D.C., on December 3, 1938.

**Carroll C. Craig** was married to Miss Dorothy Jean Thorpe of Beverly Hills on February 18th, and they are now on a round-the-world honeymoon trip.

**Irving P. Krick, Ph.D.**, has received the distinguished service award of the Los Angeles Junior Chamber of Commerce as the "young man under 35 who most valiantly served Los Angeles during 1938" for his developing of accurate weather forecasts by means of air-mass analysis.

March, 1939

## 1935

**Charles Dawson** was married to Miss Josephine Kayl of Pasadena on December 17, 1938.

**Bruce Gravitt** was married to Miss Louise Steen in Troy, N.Y., on November 29, 1938, and they are now living in San Diego.

**Adrian Gordon** is now stationed at the Meteorological Office, Windmill Hill Flats, Gibraltar. His recent letter appears on these pages.

## 1936

**Leonard Patterson** is now employed by the California Railroad Commission with headquarters at San Francisco.

**Tyler Thompson**, who is a senior in the Boston University School of Theology, has been awarded a graduate fellowship by the University which will permit him to pursue his studies in Europe.

**Frank Davis** is now an Aviation Cadet in the U.S. Marine Corps.

**Carroll R. Baker, Jr.**, was married to Miss Elizabeth McMillen Trever on December 31, 1938.

**Thomas Lauritsen** has completed his final doctorate examination at the Institute.

**Bruce L. Hicks** has completed his final doctorate examination at the Institute.

## 1937

**Dick Bailey** is employed by the Sound Effects Department of the Columbia Broadcasting System making Joe Penner's Duck squawk and Jack Haley's horses run.

**Daniel Gerlough** who is now a chief of party for the Mott-Smith Corporation of Houston, Texas, interviewed prospective employees among the graduating class for his company on a recent trip to the Coast.

**Stanford W. Briggs** received his master's degree from the University of Illinois last August and is continuing his studies at the same institution.

**Le Van Griffin** delivered a talk on earthquakes at a recent meeting of the Pasadena Moose Club.

**Wilbur F. Snelling** was married to Miss Theodora Madelaine Finley in Los Angeles on December 22, 1938.

**Martin Summerfield, M.S.**, has completed his final doctorate examination at the Institute.

## 1938

**Samuel E. Watson** is now employed as a geologist by the Texas Petroleum Co. and is stationed at Ciudad Bolivar, Venezuela.

**Lupton Wilkinson** was married to Miss Sally Mosen in Pasadena, February 14, 1939.

**Richard Forward** is now a Flying Cadet in the Naval Air Training Station at Pensacola, Florida.

**Jack W. Knight** has sailed for New Zealand where he is to do work in petroleum geology.

**Robert S. Custer** addressed the recent joint meeting of the Western Society of Naturalists and the Society for Experimental Biology and Medicine on studies of marine life.

## LETTERS

1016 West Ninth Street  
Los Angeles, California  
January 20, 1939

Gentlemen:

I don't know how many others may feel as I do, but your efforts to provide opportunity for the many who wanted to see the Technicolor show, and failed to get into the first 110, are certainly to be congratulated. I, for one, appreciate it greatly. The Caltech Alumni Association seems to be going "great guns," and my hat's off to all who have anything to do with it.

Sincerely,

L. B. Copeland, '24,  
National Broadcasting Co.  
Radio City

— T —

Manhattan, N.Y.  
March 9, 1939

Dear Ted:

Who said Engineers couldn't dance? Engineer Schild Lufkin, '29, (vice-president, Metallizing Engineering Co., Inc.) just won a bottle of champagne as first prize of all assembled guests at St. Moritz Cafe. This was during a Cal Tech party.

Yours,

B. F. Fredendall, '29,  
Meteorological Office  
Windmill Hill Flats  
Gibraltar

— T —

February 14, 1939.

Dear Editor:

I notice that you are publishing items from time to time on news of alumni. The following might possibly be interesting to my class.

I am a member of the class of '35, and received an M.S. in meteorology under Doctor Krick in '36. Unable to obtain a job with any of the airlines because of my British nationality, I borrowed thirty pounds from an uncle and returned to England in July. In October I received an appointment as technical officer in the British Meteorological office and received establishment in August, 1937.

From October, 1936, to January, 1937, I was at Headquarters, Air Ministry, London; from January to July, 1937, forecasting for the Royal Air Force on the East Coast; from July, 1937, to September, 1938, doing the same thing at Abingdon R.A.F. Aerodrome, six miles south of Oxford.

I was married in Oxford in May, 1938. In June I volunteered for service overseas, receiving an appointment at Gibraltar in July, and have been here since September and will be for three years.

Sincerely yours,  
Adrian H. Gordon, '35.

## CHAPTER NEWS

### SAN DIEGO

Judge Clarence F. Terry of the San Diego Municipal Court gave an enlightening discourse on the problems of administering justice in San Diego, to a group of Tech alumni and guests at a gathering held in the U. S. Grant Hotel on January seventeenth. The good judge brought along a few exhibits such as brass knuckles, blackjacks, knives and two diaries of women of the red light district; needless to say the latter caused quite a flurry of interest. The program was arranged by Fred De Silva, ex '22 who presided at the meeting.

Perry Boothe, who is secretary of the San Diego Chapter, recently had the misfortune of laying his foot open with an axe; fortunately it proved more alarming than serious and he is well on the road to recovery.

On the evening of March 15, some twenty-one Alumni and guests gathered at the U. S. Grant Hotel to hear an interesting talk "Inventions," presented by Mr. J. M. Clauber, Vice-President and General Manager of the San Diego Consolidated Gas and Electric Co.

### SAN FRANCISCO

The San Francisco Chapter recently elected new officers, namely, Howard Vesper, '22, president; Ed Dorresten, x'24, vice-president; Manley Edwards, '26, Secretary; and Howard Baker, '30, corresponding secretary. Under the leadership of these men a meeting was held Friday, February 17, at the Olympic Hotel. Some twenty-five members showed up to enjoy an evening of informal discussion and cards. Plans were laid for a field day at the Fair and another afternoon of golf.

### BOSTON

A letter from J. S. Edwards, '37, secretary of the Boston group, tells of a meeting held just before Christmas, attended by some thirty alumni. Incidentally he mentions that there are twenty-four Tech alumni now studying at Harvard, sixteen of whom are in the Harvard Business School.

### NEW YORK

The New York group is having an active year under the leadership of Rea Axline, '32, and Ed Thayer, '25. On January 30 a luncheon was held for Professor Sorensen and "Chuck" Schwieso who were visiting in New York and there was quite a nice turnout for a luncheon meeting. Plans are under way for several more meetings this year, including a dinner dance for the men and their wives.

### WASHINGTON, D.C.

A dinner meeting was held on the evening of February 10. Among those present were C. A. Bercaw, war '18; C. E. Fitch, '23; E. Bollay, M.S. '36; W. F. Osborn, Ph.D. '38; C. L. Gazin, '27; L. Fleming, '37; T. Fahrner, '36; T. S. Southwick, '27; and P. Harney, M.S. '35.

### BAKERSFIELD

Under the chairmanship of Layton Stanton, '27, approximately fifteen alumni held a dinner session on March 20.

Coach W. L. Stanton spoke on C.I.T. athletics. Following the talk and discussions, social diversions were enjoyed. The Bakersfield group has arranged for meeting on the first Tuesday of June, September, December and March.

— T —

## ALUMNI DIRECTORS STUDY ATHLETIC SITUATION

The Board of Directors who meet every month to carry on the business of the Association have had some particularly interesting meetings during the past few months. On January 17th a meeting, held in the club rooms of the new Los Angeles quarters of General Electric Co., was attended by the class secretaries, several alumni prominent in athletic affairs, and Coaches Stanton and Musselman. Both the coaches addressed the group which numbered about thirty-five, on what was wrong with campus athletics of today and what in their opinion could be done to improve the situation. After these talks the meeting was thrown open to general discussion, which produced many enlightening ideas. Before going home the gang enjoyed sandwiches and coffee served by our host, Harold Hill, '11, of the G. E. staff.

In order to get the reaction of, and to learn what the undergraduates think of the present athletic situation, all the Student House presidents were invited to the February directors' meeting. The usual business that came before the Board was rapidly dispensed with and the majority of the evening was spent in an interesting and lively discussion of the situation. The House Presidents and the editor of the California Tech gave freely of their ideas.

It was an almost unanimous opinion that intercollegiate competition should be continued and encouraged. The three following suggestions were the main result of the group's discussion: (1) Talks by alumni to various undergraduate groups to encourage intercollegiate spirit and activities in sports and lend a historical background of Tech traditions.

(2) Rearrangement of intramural schedules so as not to draw men away from intercollegiate sports. (3) The awarding of an Alumni trophy (preferably cash) to the House showing the greatest contribution towards intercollegiate sports during the year.

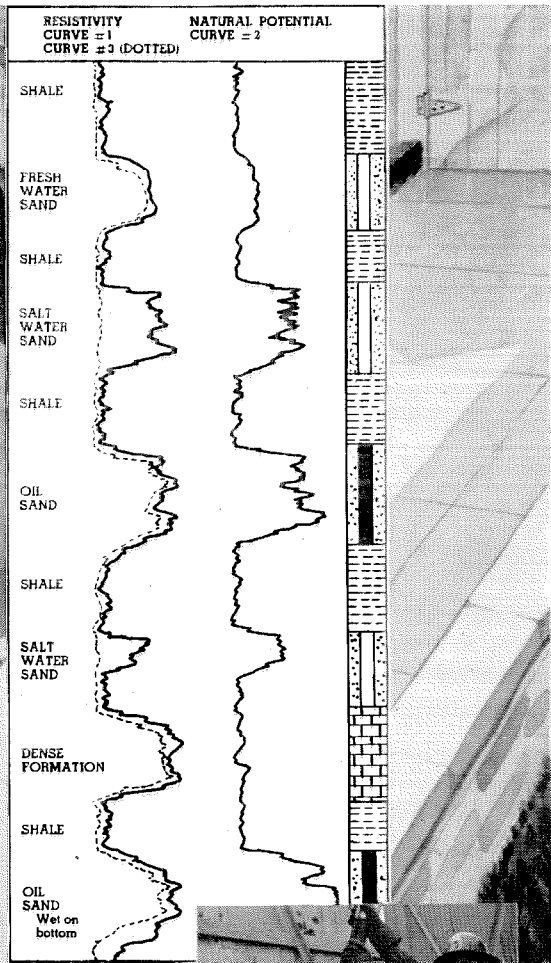
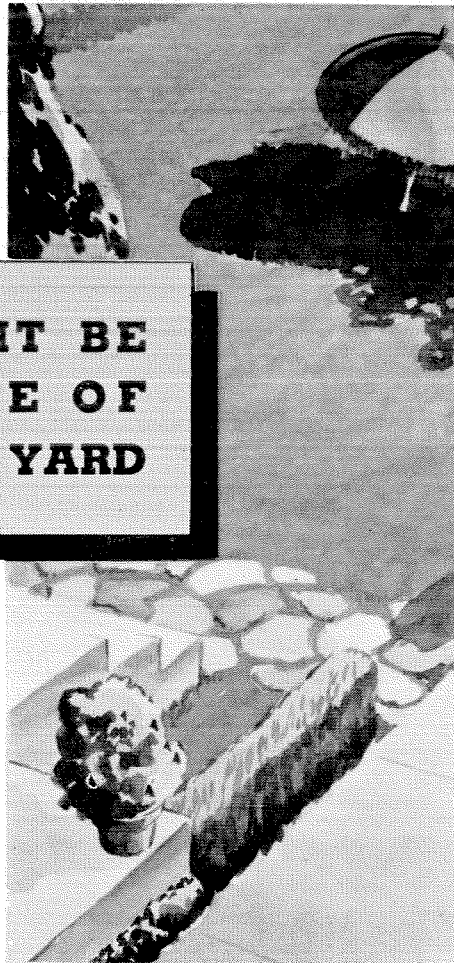
As these meetings were principally fact finding meetings the Board has taken no action.

— T —

## JEWETT M.I.T. ALUMNI PRESIDENT

Frank B. Jewett is the sole nominee for the presidency of the Massachusetts Institute of Technology Alumni Association for the coming year. Dr. Jewett received an A.B. in 1898 from Throop Polytechnic Institute. He then went to Chicago to study under Dr. Michelson and in 1902 received a Ph.D. from the University of Chicago. The next two years, 1902-1904 were spent as an instructor in physics and electrical engineering at the Massachusetts Institute of Technology. Since that time he has been associated principally with the American Telephone and Telegraph Co. of which he is now vice-president.

**THIS MIGHT BE  
A PICTURE OF  
YOUR BACK YARD**



**Y**OUR own back yard might look like this—to a petroleum engineer. It's true the picture isn't beautiful, but it is an accurate chart of sub-surface formations.

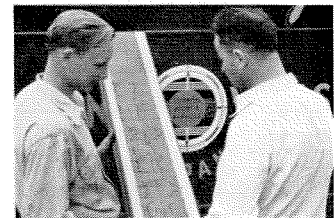
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