

SURPRISES AHEAD FOR 1938-39 MEETINGS

By Clarence F. Kiech, Chairman Social Committee

Bigger and better. That's the outlook for this year's social and Alumni-betterment program outlined by the social committee.

Starting off early in the year, the first general meeting will be held at Hotel Clark on September 30, giving you the amazing story of commercial aviation, presented from the viewpoint of executive, pilot, meteorologist and stewardess. Following this meeting, something entirely new as a round up for the Oxy game.

Again this year, an Alumni Seminar Week-End will be an outstanding Spring event, with new speakers, new topics and new ideas. Last year's "first edition" drew Tech men from as far away as Texas. The demand this year promises to exceed that of last, and you can't afford to miss this four-star event.

Talks on world affairs, engineering advances and practical subjects of interest to all Tech men will appeal to those attending other general meetings which are planned. We are trying to arrange for speakers who are internationally known, and some distinct surprises are in store for you in those meetings. A top-notch dance, new features for the Stag and Field day, and the best June meeting ever, fill out the year's program. The plan of associating a different chairman to arrange for each meeting will insure new ideas, new entertainment and new talent.

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TECH REJOINS CONFERENCE

After four years of freelancing in athletics, Tech has rejoined the Southern California Intercollegiate Athletic Conference. Last May 14th, on recommendation of the Athletic Council, the Executive Council voted to accept an invitation to membership. Pomona had taken similar action a few days before. Occidental, San Diego, Redlands, Whittier and La Verne are the other members. Santa Barbara is entering a new conference with San Jose, Fresno and San Diego.

Conference games will be played with Occidental, Redlands, Pomona and La Verne this fall, as shown below.

News from the Institute indicates that a new backfield will be performing behind a veteran line. About 40 were signed up for spring practice. Fall practice is rapidly whipping the team into shape. Despite sparse poundage and only ten days of practice before an important game, the outlook is optimistic. Here's trusting you'll make history, Captain Bill Lawson!

*Tuesday	September 20	Loyola	at Gilmore Stadium
*Friday	September 30	San Jose	San Jose
*Friday	October 7	Redlands	Redlands
*Friday	October 14	Marines	San Diego
Saturday	October 22	Pomona	Claremont
*Friday	November 4	Occidental	Rose Bowl
*Friday	November 11	La Verne	La Verne
*Wednesday	November 23	Pasadena J.C.	Rose Bowl

* Indicates night game.

HACKER WRITES TO EDITOR

New York City

August 31, 1938

Dear Ted:

. . . You ask my opinion as to the value of the Alumni Association to a fellow who lives away from Southern California. To me, a wideawake Alumni Association under such conditions offers two advantages: In the first place, I find the present Alumni Association Magazine most interesting, for it is my most direct means of keeping informed as to the activities of my college friends. Secondly, encouraged and aided by the Parent Alumni Association, we have a local chapter. This serves as a common meeting place where a group of fellows can meet from time to time.

You ask if the liaison can be improved. I have felt for a long time that if the Alumni Association could supply the recent graduates with a lot of worthwhile information, which those men should consider before they make any decision in respect to coming to New York to work. New York City is not a bad place to live and work, but my opinion is that it is very different from conditions found in Southern California. I believe that those fellows who have never been away from Southern California should know of some of the conditions in advance before deciding to come East. They should have some idea as to the cost of living, the general level of starting salaries, and other matters of similar nature. I think they also ought to have an idea as to the type of pleasures and recreations that we in the East have found of interest, for, in many cases they are quite different from similar ones you have in the West.

We have discussed this problem at these meetings of our group here in the East and I know some of the other boys are not in agreement with the above idea, however, I think the Alumni Association, by means of a questionnaire, should determine what information is needed from those living in the East. This information should be recapitulated and given to all graduates who have the desire to come East to find employment.

You ask that I give a good account of myself. This is rather difficult, for I suspect we all feel that our own jobs are rather prosaic, and always feel that the other fellow's job is much more interesting. However, at present I am trying to hold down the position of Export Manager for the American Lead Pencil Company, and every once in a while I surprise myself by selling a Venus Drawing Pencil, or other pencils in our line to somebody in Mexico, China, or other distant place.

With best regards, I am,

Sincerely yours,

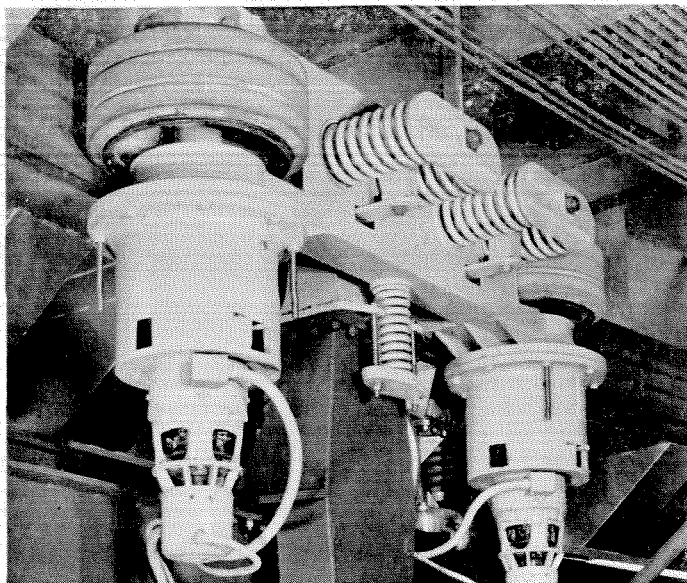
William D. Hacker, '31.

EDITOR'S NOTE—Many thanks, Bill, for your excellent comments. They will not go unheeded. We solicited your letter in order to initiate another *Alumni Review* department. To all other alumni we announce that henceforth letters to the editor will be published to the extent of space available. We urge your constructive criticism of your Association and its facilities in the interest of developing an organization which has genuine value to each and all.

PALOMAR

Before the end of this year, final grinding and polishing on the 200-inch mirror for Palomar Mountain Observatory will have been completed. To date, over 9,200 pounds of glass have been removed from the disc and the phase of precise grinding is in progress. A ton of jeweler's rouge is being used to abrade yet polish the surface to its final shape within a tolerance of a millionth part of an inch.

Meantime, 500 tons of telescope parts are being shipped from steel mills in Pennsylvania for assembly in the completed



Dome Driving Mechanism

dome during the winter months. The 16-ton mirror will be given its final trip of 130 miles from Pasadena to Palomar Mountain during June, 1939.

COVER ILLUSTRATION *

Shown on the front cover of this issue is an official working rendering of the telescope installation, so drawn as to illustrate various positions of the tube and optical characteristics of the Cassegrain and Coude focii. It is a correct portrayal of the functioning of the world's largest telescope.

Impossible to show in this illustration are many new ideas, new materials, new design and construction methods occasioned by a new order of magnitude, precision and technological advancement of materials and methods. Noteworthy predecessor of the 200-inch telescope is the 100-inch at Mt. Wilson. Each the best effort of its day, a comparison of construction evidences remarkable progress during a relatively short thirty-year period.

The telescope tube consists of arc welded parts except for units which are to be bolted together on the site. Its design was based primarily on rigidity rather than strength, in order to provide accuracy, during use, compatible with that

* NOTE—The American Society of Civil Engineers in its magazine, "Civil Engineering," featured the Palomar illustration in its August, 1938, issue. Permission to use this on the cover of the Alumni Review is much appreciated.

of the large mirror. A deliberate attempt has been made to build a structure which will be modern even fifty years hence.

Pointing the telescope at a star and keeping the image immovable on a photographic plate is comparable with the accuracy required in pointing a gun at an object eight miles distant, two inches in diameter, moving transversely at a rate of three feet per second—and firing a perfect score. Never before has such precise manufacture been attempted on as large a scale.

The dome is driven by a unique friction drive which consists of sets of solid rubber truck tires, driven by a standard geared motor of 100 to 1 reduction. This drive is so insulated as to be virtually vibrationless and noiseless.

Vibration control has been a study of new importance in the design of Palomar, for an angular deviation of the tube of 1:6,000,000 is sufficient to disrupt its use for certain observations. Man-made and machine-made vibrations are either isolated completely or dampened.

TECHNICAL REPORTS AVAILABLE

In its several issues the Alumni Review has presented news items and illustrations of the Palomar project. At the request of alumni, further news and, if desired, technical reports on items of reader interest will be offered in forthcoming issues. Perhaps you are particularly interested in optics or mechanics, foundations or insulation, transportation problems or radio communication, model building or business administration—or even the astronomical possibilities of the new observatory. What is your preference?

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TECH GETS \$1,000,000 AND 249 ALUMNI

In a drizzling rain, some two hundred and forty-nine candidates for degrees were graduated June 10 on the Institute Campus. Twenty-five took Ph.D. degrees; ninety-three were given permission to add M.S. to their names; and one hundred and thirty-one graduated as Bachelors of Science.

Of those graduating, twenty-nine were awarded Honor Keys for Student Activities, and fifteen graduated with honor by vote of the faculty. Two, James Robinson Balsey, Jr., and Harrison Morton Lavender, Jr., were honored both by the students and faculty.

The second of two half-million dollar buildings for biochemical research, donated by Wm. G. Kerckhoff and his wife, was dedicated. Dr. Millikan announced a million dollar grant by the Rockefeller Foundation for research in biology toward improvement of the human race. This work will be carried on in the Kerckhoff laboratories under Pauling and Morgan. "This gift makes possible new research in the most vital of all needs—biological improvement of the human race," said Dr. Millikan. "This may be accomplished through an intensive study of organic chemistry as related to human life."

Dr. Edwin Hubble, renowned head of Mt. Wilson observatory, spoke on "Experiment and Experience" in his commencement address.

PLACEMENT SERVICE BECOMES INCREASINGLY VALUABLE

By Dr. Donald S. Clark, '29, Director of Placements

The success of any educational institution is to a large degree reflected in the ability of its graduates to obtain positions. The efficiency of a Placement Service is determined by its ability to assist men in securing work and in bettering their positions.

In spite of the recession which has been experienced during the past year, on July 1st at least 84 per cent of those who received degrees in June, 1938, were known to be employed, or planning to continue with graduate work. On July 1st, 1937, the same proportion was known to be placed. Since July 1st, 21 further placements of the 1938 group have been made, 13 through the Placement Service and 8 through the efforts of the graduate alone. Records show at this time that 19 of the 249 graduated in June are still unemployed. However, some of whom we have no knowledge may be employed.

It is of interest to note that 7 per cent of the men receiving the B.S. degree this year are planning to attend either Harvard Graduate School of Business Administration or Stanford School of Business Administration.

As to Alumni Placement, the office records show that 313 requests were received from companies and individuals and that 254, or 81 per cent, were supplied with applicants. These requests involved 332 men, of which 101 openings were filled by the applicants.

In some cases positions are obtained through contacts suggested by the Placement Office and, therefore, the above figures do not include all placements, the total being 146.

In 1936-1937, 152 men were placed through the Service. During the past year 138 men registered with the Placement Office as unemployed. The time they remained on the unemployed list varied from less than one week to as much as 42 weeks. In going over the data given, it must be realized that certain men are not fitted for the type of positions which are offered. The Placement Service attempts to put men in jobs for which they are qualified.

In summary the data show that, in general, men who received degrees in June, 1938, were as successful in obtaining positions as were the graduates of 1937. Considering the recession, this seems to be a good record which cannot be equaled by very many educational institutions. Reports have been received to the effect that the majority of eastern colleges were able to place only approximately 60 per cent of their graduates this year.

The ability of the office to fill only 30 per cent of the requests for men is to a large degree due to the lack of qualified applicants. Men who are desirous of improving their positions seem to be very lax in filing with the office. Two weeks ago cards were mailed to all men whose names appeared in the "Betterment File" asking that they bring their applications up to date. Alumni will not only benefit themselves,

but also the Placement Service and the Institute by advising the office whenever they wish to improve their situations or when they are unemployed.

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ENTRANCE QUIZ GIVEN 450

Examinations for admittance to the Class of '42 were completed by more than 450 applicants.

The number taking the examinations was in line with the continual increase shown during the past few years. In 1935 there were 288 applicants, 305 in 1936, and 369 in 1937. These figures represent those students permitted to take examinations because of outstanding high school or other educational records. Many more applied but were not given the examination.

Of the 450 applicants, the maximum of 160 are entering the institute this fall as freshmen. To aid in selecting this number, Dr. Ray E. Untereiner, dean of freshmen, Dr. Carl Anderson, Phillip Fogg, registrar, and Dr. Frederick Lindvall have traveled through the country for personal interviews with applicants.

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WEATHER PROPHET

Dr. Irving P. Krick recently was selected by the Board of County Supervisors as the official weather forecaster for Los Angeles County, filling the vacancy caused by the resignation of Eugene Bollay, who has accepted a position with the United States Weather Bureau in Washington, D. C. Appointment was made on recommendation of C. H. Howell, chief flood control engineer.

It will be the duty of Dr. Krick, head of the department of meteorology at Caltech, to observe weather prospects between Sept. 1 and June 1 and to impart all of his information immediately to the flood engineers of the county.

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ALUMNUS HEADS HUGE POWER PLANT

Irving C. Harris, '00, consulting engineer, who has been with the Bureau of Reclamation since 1933, in charge of inspection and installation of equipment at Boulder Dam, has been appointed director of power there. Harris served as chairman of the engineering jury that investigated the St. Francis Dam failure and was a member of a similar group that determined building damage resulting from the Southern California earthquake in 1932.

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TWO MILLION VOLT X-RAYS

Announcement was made in June of the completion of a 2,000,000 volt modified Vandegraaff electro-static generator at the Institute. It was built by W. A. Fowler and Thomas Lauritsen under the direction of Dr. C. C. Lauritsen. So powerful that it can transmute elements and emit artificial radium rays, it is to be used for atom smashing and for studies in the treatment of cancer with double the potential used heretofore.

NATIONAL DEFENSE

(Continued from page 9)

(RAI), 1st. Lt. Fred S. Scott, '30, with the 329th Chemical Warfare Regiment, 2nd. Lt. William D. Hacker, '31, with the Ordnance Department, 2nd. Lt. Albert Creal, 13th Battalion, U. S. Marine Corps, Reserve.

The Regular Army has to our knowledge four former Tech men, two of whom attended the U. S. Military Academy at West Point after receiving degrees at C. I. T. They are 2nd. Lt. Wm. R. Shuler, '32, whose station is with the 6th Engineer Regiment at Fort Lewis, Washington, and 2nd. Lt. Gerard J. Forney, '33, who is in Scofield Barracks, Territory of Hawaii, and assigned to the 3rd Engineer Regiment. The other two are 1st. Lt. Kenneth R. Crosher, '28, who is in the Air Corps and stationed at Albrook Field, Corozal, Canal Zone, and Capt. Vernon P. Jaeger, Ex '27, who is a Chaplain stationed as last reported at Fort Riley, Kansas.

The Navy has at least two Tech men on active duty, Robert G. Fussell, '35, who is assigned as Aviation Cadet on the U. S. S. Salt Lake City, and Gordon J. Brakesman, Ex '33, with a similar assignment on the U.S.S. Chicago.

The Naval Reserve has Ensign Fred A. Wheeler, '29.

The names mentioned here probably will be added to in future issues of the Alumni Review, and its readers will then be able to get a fairly good idea of the former Tech men who are demonstrating their patriotism in a very practical way. It goes without saying that many of those whose names appear here are maintaining their Reserve commissions at a considerable personal sacrifice, and the Institute and its alumni can well be proud of their activities, particularly at this time, when many institutions of higher learning in this country have become identified as harboring those who actively sponsor anti-military doctrines. There is, too, some recompense to the individual in so participating in military activities, which includes the maintenance of good physical condition, a happy association with others of similar ideals and the knowledge of being an important unit in the armed forces of the nation if an emergency should arise.

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GIGANTIC PUMP TO BE DEVELOPED

As a result of the success of hydraulic tests made for the Metropolitan Water District at the Cal Tech Laboratories, new and larger pumps for the Grand Coulee Project will not be manufactured until the designs have been thoroughly tested in Pasadena. Each pump will be designed to deliver 1600 sec. ft. to a height of 295 feet, and will require 60,000 H.P. for its operation. The flow from one pump will be as great as the total flow of the Colorado River Aqueduct. The tests will be directed by Dr. Theodor Von Karman, Prof. R. L. Daugherty, and Prof. R. T. Knapp. Donald P. Barnes, '29, engineer for the Bureau of Reclamation, will be the government representative on the campus.

BATTERY REQUIREMENTS FOR TRAWLERS

An article on "Battery Requirements for Trawlers" by H. V. Ingersoll, '26, was published in the March issue of "Atlantic Fisherman." It is a study of the correct use of batteries in fishing boats, calling attention to the fact that the day is past when lighting alone determines the battery capacity. Result of an actual test run is shown. Herb is with The Electric Storage Battery Company (Exide) in Boston.

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REDUCED LANDING SPEED STUDIED

Dr. Clark B. Millikan has been experimenting with slots cut in the wings of airplanes to increase the lift. The theory he is working on is that the lift is due to a vacuum on the top of the wing which breaks up at a certain point. By slotting the wings near this breakup point and correcting the turbulent condition he hopes to improve the lift obtainable, making it possible to land at lower speeds.

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BELL LABORATORY RECORD HAS ARTICLE BY BIDWELL

In the July issue of the Bell Laboratory Record there is an article by C. H. Bidwell, '26, which will be of interest to those who knew him at the Institute. It is a description of a "Carrier Supply for Type K Systems." Since graduation he has been with the technical staff of the Bell Telephone Laboratories, recently working principally on carrier telephone equipment.

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DR. CARL C. THOMAS PASSES

A heart attack on June 5 brought to a close the career of Dr. Carl C. Thomas. Dr. Thomas was an associate in Engineering Research at the Institute. He was a member of the first graduating class of Pasadena High School and a member of the first graduating class at Stanford University, although he later transferred to Cornell where he received his first degree. He became a member of the Cornell faculty and published the first book ever written on steam turbines. He was a former City Director of Pasadena. He will also be remembered long as organizer of the engineering department of Johns Hopkins University and as engineer with American International Shipbuilding Company during the World War for the construction of 100 ships.

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IN MEMORIAM

Margaret Bell, aged 2½ years, daughter of Mr. and Mrs. Frank W. Bell ('28), succumbed to an intestinal disturbance on June 26, 1938.

John Capra, son of Mr. and Mrs. Frank Capra ('18), succumbed to an infection following a tonsilectomy. His death was on August 23.

Monte L. Mesenkop, 8, son of Mr. and Mrs. Louis Mesenkop ('27), drowned on August 6, 1938.

His many friends regret Howard Vesper's ('22), loss of his father who was killed in an automobile accident early in September.

DIRECTORY

Your classmates and fellow alumni want to know where you are and what you are doing. You, in turn, are just as anxious to renew this type of acquaintance with the fellows you once saw daily on the campus—and you want to find out just who lives within hailing distance of you now. We know this from the many comments and questions which come to the alumni office.

Accordingly, your Board of Directors has authorized the publication of a Directory—the first to be issued since 1928. This matter of a Directory is being taken very seriously, for it represents a sizable expenditure of both time and funds. Those who have been in contact with it thus far are thoroughly sold on its possibilities. They expect your participation to the fullest extent; speedy return of the information requested. A large number of listings have already been received.

This is an all-alumni publication. Listings are in no way limited to members of the Association. Included will be, as completely as possible, everyone who has received a basic or advanced degree, or who has been an undergraduate.

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SORENSEN MAKES TRIUMPHAL TOUR

Prof. Royal W. Sorensen left Pasadena in early summer on a tour. He returned with a pocketful of notes and two new titles. He became a Doctor of Philosophy at University of Colorado and a Grandfather in New York.

At Boulder, Sorensen was honored in a degree as Doctor of Science by his alma mater. He then hurried to Washington, D. C., to deliver an address before the American Institute of Engineers, entitled "The Economic Status of the Engineer." In this address he called attention to the bright future for engineers. He said that while starting salaries were perhaps \$25-\$30 per week, half of the engineers would attain a peak of \$5,000 a year, and the highest ten per cent would average top salaries of \$12,000 to \$13,000 per year. He said the peak came at 60 years. He said that less than 3 per cent of Cal Tech graduates were unemployed during the depression.

He attended, also, meetings of the Society for Promotion of Engineering Education at the Texas A. and M., a council of educators in Chicago and the Engineers Council for Professional Development, western committee, at San Francisco.

While in New York, a daughter, Virginia, was born to Mrs. Fred Groat (Peggy Sorensen). Fred Groat was Student Body President in 1924.

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PROBABILITY MACHINE DEvised

Dr. Alexander Goetz and Dr. W. O. Gould have devised a method of determining the graininess of motion picture film and indicating it directly on a scale. The method involved has possibilities of other applications in dealing with statistics, and arriving at probabilities by mechanical analysis.

NEW CRELLIN LABORATORY DEDICATED

The new Crellin Laboratory of Chemistry, donated by Edward W. Crellin and Amy Hutchison Crellin was dedicated May 16th. Mr. Allen C. Balch, President of the Board of Trustees, thanked Mr. and Mrs. Crellin on behalf of the Board, for their material assistance in carrying on the Institute's program. Mr. Crellin responded with a tribute to those he had worked with in planning the Laboratory, and a regret that Mr. Gates and Dr. Noyes, who first interested him in the Institute, had not lived to see their dreams fulfilled.

Dr. Linus Pauling then spoke of the place the Laboratory would fill in research. "Organic Chemistry was developed into a great science during the nineteenth century—. There is however a related field—that has barely begun its development. This field deals with the correlation between chemical structure and physiological activity of substances—essential for orderly growth and the maintenance of life, as well as of the many substances which are useful in the treatment of disease. — Their chemical investigation has been made possible only by the development in recent years of highly refined techniques—."

Dr. Millikan then outlined the development of Chemistry at the Institute, paying tribute to Dr. Noyes, and those who had aided him. "Ninety-five per cent of all business ventures fail, and I suspect the record of philanthropic enterprises is not much better. The 'enterprisers'—the men who start things off and make them go—richly deserve all the credits and all of the social rewards which they ever get." He concluded "Thus the problems of bio-organic and structural chemistry—that is on the problems of life itself—are now provided through the joint interest of Mr. and Mrs. Crellin and the Rockefeller Foundation."

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ZWICKY OBSERVES BRIGHT STAR

Dr. Fritz Zwicky came to the attention of "TIME," July 4th, in a few paragraphs relative to his observations of a brighter star than had been before observed. This star, when observed at the peak of an explosion, was figured to be 400,000,000 times brighter than the sun. It has since fallen off to a mere factor of 1,000,000. According to the article, this star is beyond the Milky Way and is extremely dense, weighing 6,000,000 tons to the cubic inch. It is probably only 60 miles in diameter.

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CROSS JOINS BROWN UNIVERSITY

Brown University has announced the appointment of Prof. Paul C. Cross as an associate professor. During the years 1933-34 and 1934-35 he was a National Research Council Fellow in Chemistry at Cal Tech. He has been particularly interested in the study of compounds in which deuterium (heavy hydrogen) is substituted for ordinary hydrogen.

BOOK REVIEW

A synopsis and criticism by *Professor William Huse.*

A DAY OF BATTLE, by VINCENT SHEEAN.

The Day of Battle which Vincent Sheean has chosen as the subject of his latest novel is May 11, 1745, when the French won a victory over the English and their allies at Fontenoy in Flanders. It was a glorious victory, but the pomp and pageantry, the romantic appeal of the past, which form the staple of most historical novels, have no place in the author's scheme. His interest, rather, lies in exploring, against the background of his battle-piece, the personalities of the victors; in suggesting the irony of their divergent motives and the further irony of a magnificent victory which accomplished nothing.

We follow the fortunes of the battle now with Maurice de Saxe, the German-born commander of the French army; now with one of his aides; now with the Irish brigade of Jacobite exiles; now with Louis XV and the Dauphin, who, with their suites, watch the progress of the day from a safe vantage-point behind the lines.

For Maurice de Saxe, the battle is an exercise in military tactics and strategy. It is, moreover, another step in his long, self-imposed struggle to vindicate himself from the unhappy chance of illegitimate birth. And so he forces his pain-wracked, diseased body through the ardors of the day, imposing his will on his troops, on the King, on the futile-red-heeled grandees of France who resent him as an alien, a boor, and an upstart.

For the Jacobite exiles, a victory promises an open way to the Channel and to England, and the restoration of the Stuart dynasty. For them—some of them in the third generation of exile—time and distance have added an extra glamor to their homelands, and they are actuated less by devotion to the Stuart cause than by a homesickness for the Scotland and Ireland which some of them have never seen. So they play their decisive part in the crisis of the battle, with no premonition of Culloden, which, a year later, was to end their hopes forever.

For the King, a victory represents above all an opportunity to enhance himself in the eyes of Madame Lenormant d'Étioles, soon to be introduced at Versailles as the Marquis de Pompadour. For this, the King has come himself to witness the battle, with his enormous, useless retinue; and when for a time the French success seems dubious, he is less concerned with the realities of defeat than with his disappointment at not being able to present his new mistress with a victory as a pledge of his love.

For the courtiers, the King's trust in Marshall de Saxe is an affront to their own pride of birth and position; and the commander's grim realism is a further affront to their code of chivalry, which is fantastically out of place in the realities of warfare. Only one of them, the Marquis d'Argenson, Louis' Minister for Foreign Affairs, has any perception

of the larger complex of impersonal forces behind the battle. He is aware that more is involved than the fortunes of the day; that in the background lies the struggle for India and Canada, and ultimately for the supremacy of France or England. And while he is "professionally bound" to believe that a victory will achieve French domination in the colonies and in Europe, an inner conviction, growing out of his knowledge of the decay and extravagance and corruption of Versailles, tells him that a French success at Fontenoy can have no permanent effect on the rising tide of English power.

Toward the close of the novel, the ironies of personality and situation are further enhanced when the author takes us from the battlefield to Etioles. There Jeanne Lenormant is just finishing her preparation for Versailles. The Abbe Bernis, who has been assigned by Louis to instruct her in the ways of the magnificent world in which she is soon to play a great part, has learned to be genuinely fond of his pupil. Voltaire, who drives from Versailles to spend the day with the two, is attracted to her as he is to any rising star who may further his own fortunes. The Abbe profoundly distrusts Voltaire; Voltaire amuses himself by mocking the Abbe. And Jeanne, already savoring in anticipation the power which is to be hers, preserves the balance between the two men in a delicate comedy of manners which continues through one quiet country day, while the battle is being fought at Fontenoy.

In his Foreword to the novel Mr. Sheean says, "To look upon the losers in their moment of victory, to reflect upon the lost cause when it seemed to win, and to feel by some system of imaginative transference what men and women felt on the day of Fontenoy, was the hope of the author . . ." One can only say that he has succeeded.

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HUGO BENIOFF GOES MUSICAL

Dr. Hugo Benioff of the seismological staff has recently announced the construction of a cello and a violin without the conventional resonance chambers. By converting sound waves into electrical waves and amplifying them, sending them out again through a loud speaker he is able to get not only greater volume but particularly, new depth and range of tone is also said to be realized. The new development is a result of spare-time work for the last eight years.

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BOWEN LEAVES TECH

Dr. I. S. Bowen, California Institute of Technology physicist who has done notable work in the investigation of cosmic radiation, has been appointed Alexander F. Morrison research associate at the Lick Observatory of the University of California.

Professor Bowen also is known for his observations and analyses of the laboratory spectra of various elements, and for his epoch-making analyses of the spectra of the gaseous nebulae.