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CAMBRIDGE, MASS., FRIDAY, MARCH 8, 1918

Price Three Cents

4.00 O'CLOCK

MR. BRUSH TELLS OF FACTORS IN SUCCESS

President of Boston Elevated Gives Informal Talk on His Experiences and Their Relation to His Position

ELECTORAL COMMITTEE CHOSEN

At the last meeting of the Technology student branch of the American Institute of Electrical Engineers, "Mat" Brush, '01, president of the Boston Elevated Railway Company, eluciated the means of success for the young engineer in the business world and demonstrated in himself the example of a Technology graduate who has really placed his position in the line of successful engineers. Although his informal talk lasted over a period of two hours, and the discussion and advice given by him consumed another, the sixty odd attending members of the society were held as spellbound by the tale of personal experiences and those of other men with whom he continually comes into contact. Even if there was no ice-cream served at the smoker, because the Institute refrigerating plant was not in running condition and no outside arrangements could be hurriedly made, the attending students at 7:00 o'clock. The room will be anwere quick to take advantage of the time nounced later. thus gained in obtaining fatherly advice of all conceivable sorts from President Brush.

"Stick-to-it-iveness and concentration" is the one motto which "Matt" dwelt upon especially as the means of success to himself and a large percentage of his acquaintances; and this motto was vividly brought out by the speaker in the tale of his life. Deprived of an early education by the unfortunate circumstances of his family in the panic of 1893, "Mat" was forced to earn an humble living as a hotel porter in a small western town; but even such difficulties did not keep him from his goal as an engineer. While assuming his duties at J. C. Howe, assistant secretary. this time he met several prominent men | n Iformer years, the permanent offihim on his road to Technology. But the class as a whole, each member being Club on the possibilities of establishgreat financial task was left to 'M-v' himself, and he immediately obtained choice. On account of the number of Boston. In the event that one is essummer employment on a lake steamer for five consecutive years.

It was while he was working in the capacity of porter in his first year there that "Mat" took advantage of his opportunity to advance, for when the purser of his steamer piled work upon are: R. W. VanKirk, president; E. P. vehicles propelled by automotive powhis shoulders he buckled down to it and "concentrated." The amount of work land, secretary; S. W. Fletcher, treas- now commonly applied to it. which he had to do, increasing from year to year, he assumed grea responsibility and was soon advanced to the position of purser, with a corresponding increase in salary of six hundred and seventy-five T. C. A. APPOINTS MEN TO dollars per season. Here was one of the many times when President Brush jumped at an opportunity, and was advanced, submitting to extra work that was expected of him, rather than getting away with the least he could do. As a lesson of this experience, President Brush has devised the saying, "Push against the wall of opportunity all the time; so that when a hole is broken through for you, you will be the first one there to take advantage of it."

It was while on this steamer as a porter that "Mat" met Mr. John D. Rockefeller, a passenger, who became interested in the polite, energetic servant and his story, and gave him a recommendation to the mayor of a Massachusetts town. This letter was of great use to him at the end of the first term of his freshman year at the Institute, when his friends became exhausted and his college career was dangerously near to a fatal end, for it brought to him on a loan enough money to tide him through to the next summer. Here again was an example of taking advantage of op-

portunities. After graduating from the Institute "Mat" went to work in a western railroad as an assistant machinist, where he distinguished himself again as a person of remarkable presence of mind and excellent ability. The chief machinist was tossing hot sections of an air com-

(Continued on page 2)

JUNIOR PROM SIGN-UP CAMPAIGN STARTS MONDAY

It has been definitely decided to start the sign-up campaign for the Junior Prom Monday, March 11th. The number of sign-ups this year is to be limited to 200 and as soon as this number is secured the campaign will close. In the event that 200 are not secured within a reasonable amount of time the campaign will continue for three weeks, after which time, however, it will be closed even if 200 have not been secured. first 200 to sign up will be issued tickets. The price this year is the same as that of last year, one dollar for the sign-up and six dollars for the tickets. Sign-ups can be secured from any of the members of the Prom Committee, which is comprised of the following men. W. H. Banks, Jr., E. F. Doten, C. W. Drew, Jr., G. C. Fleming, R. P. Hackett and E. R. Smoley. The Prom will be held at the Somerset Hotel on Friday, April 19th.

FINANCE COMMITTEE

Finance Committee reports are now due in room 3-203 and if the door is locked, enter through room 3-205. Reports should be left in the lower righthand drawer of the Finance Committee files. The next meeting of the committee will be on Friday evening, March 15,

ELECT 1918 OFFICERS

Governing Board Picks Men for Permanent Positions

At a meeting of the Governing Board of the Senior Class held last Wednesday afternoon the following men were elected as the permanent officers of the class: Kenneth Reid, Alumni Council representative; R. W. Van Kirk, presirepresentative; R. W. Van Kirk, president; D. M. McFarland, secretary; the field secretary of S. A. E. and Mr.

sent a ballot upon which to mark his ing a section of the S. A. E. here in Seniors who have left the Institute tablished the Aero Club will become this year to enter the service, how- associated with it. The S. A. E., Soever, it was deemed advisable by the ciety of Automotive Engineers was Governing Board to depart from the formerly called the Society of Auto-

Collins, vice-president; D. M. McFar- er it has been changed to the name urer; Kenneth Reid, P. M. Dinkins, Institute Committee; T. P. Kelly, G. H. of the Club was also read and was Porter, executive committee.

gious education department. This part tenant J. C. Hunsaker '12, formerly of the organization includes the freshman and upperclass discussion groups, the T. C. A. talks and church coperation.

Gerald Tattersfield, '20, is chairman of the community service work. This covers the entertainments, the collection of clothes, boys' work and deputations.

John R. Potite and P. W. Carr, '18, have been chosen as delegates to represent the T. C. A. at the conference of the Intercollegiate Religious Societies. which is to be held at the Newburyport Y. M. C. A., March 15 and 16.

FACULTY NOTICE

An informal and voluntary continuation of the first term's course in Contemporary Drama has been started and will meet Monday mornings at 11:00 o'clock in room 2-245. All students are welcome, regularly or sporadically, without further formality.

Robert E. Rogers.

FOUND A fountain pen which was borrowed from a student during the past registration has been turned in to THE

NOTICE Beginning with the next issue, Wednesday, March 13, THE TECH will TECH. It may be obtained by the appear regularly on Wednesday and Robert E. Rogers and Mrs. Frank Ay-Saturday. owner upon identification.

AERO CLUB HOLDS LIVELY MEETING

Lieut. Dost Tells of Swiss Army Life-Prominent Members of the S. A. E. Invited to Address

PLAN CLUB DANCE

Lieutenant Dost of the army engineer school at the Institute, and formerly in the Swiss army, was the principal speaker at a meeting of the Aero Club held in the Caf last week. The speaker first told of the methods of training employed by the Swiss army in creating a first class soldier out of a green recruit, and showed the uniqueness of these methods as compared with those of other nations. Each man owns his own rifle after a period of service, and if he is a member of the cavalry he owns his own horse receiving pay from the government in return for its use. Lieut. Dost described in a very vivid manner the system of drills in vogue and how the work on the shooting ranges is supervised. Although a system of compulsory military training is enforced throughout Switzerland; students are given special exemption from drilling while pursuing their studies. In concluding his speech the speaker gave an effective resumee of Switzerland's connection with the war and particularly her relations with the belligerents. Lieut. Dost is a member of the Society of Automotive Engineers and was formerly chief designer for the Aero Marine Corporation of New York.

At a business meeting immediately following the speech it was voted to make close connections with the S. A. E., which is considering the feasibility there has lately been an agitation started to have one established here. As a means of promoting such an action Frank Russell, vice-president of the Burgess-Curtis Aero Company at Marers of the classes were elected by the blehead to come and addess the Aero mobile Engineers but since the advent The members of the Governing Board of the aeroplane and other forms of

A copy of the revised constitution voted to be accepted. Although there yet remains a few corrections of technicalities to be made. By far the most VARIOUS POSITIONS important transaction of the evening was the election to honorary member-The T. C. A. has appointed Norris G. ship of Mr. Howard Carlton, chairman tor in aviation; and Col. Theodore Roosevelt. The vote was unanimous that these men above mentioned should be honorary members.

The officers of the Aero Club anwho is desirous of becoming affiliated vulged. with the S. A. E. should hand in their name at once that the officers may schools who will be permitted to attend. More definite plans will be announced later, however, and the officers are hopeful that arrangements of the students in the government schools as possible

The cast rehearsal which was to have peen held last Tuesday night in the Caf, was postponed owing to the inability of Coach Duncan to attend at the fice in that church. Archbishop last minute. This meeting was important as the second cut was to have last named of which he became a membern made and announcements will be ber of the Anglican Church. He served ber of the Anglican Church. He served

CONVOCATION CALLED

TO HEAR ARCHBISHOP

English Primate Is in This Country on Mission of

Friendliness to American People at Request

of Ambassador Page

The Right Honorable and Most Reverend Cosmo Gordon Lang,

D. D., Archbishop of York, Primate of England, and Metropolitan,

who has come to the United States at the express desire of Ambassador,

Page on a mission of friendship to the American people, will be the

speaker at a convocation of the students and faculty of the Institute,

called by President Maclaurin for Tuesday, March 12, at 4.00 o'clock

SPEAK IN 10-250 AT

WILL

in room 10-250.

TECH SHOW CAST NOT YET

DEFINITELY DECIDED UPON

All Show Notices will be Posted on

Bulletin Board in Lobby

OF YORK ON TUESDAY

The chorus rehearsal was held as originally announced and Coach Howard was well pleased with the showing and the general progress and imwas consecrated Bishop Suffragan of provement of the players. Several establishing a branch in Boston. more violinists are needed and all men the Archbishopric of York. He is recog-There is a section in New York and | who are capable of playing the violin nized as both a preacher and a statesare urged to come out by Musical Di-

rector Howard. gement urges everyone conected with the show to take care and watch for The Archbishop will probably arrive

DORMITORY DANCE

To Be Held in Walker Memorial Saturday Evening

Dormitory Dance will be held in Walk-Abbot, Jr., '20, chairman of the reli- of the Aircraft Production Board; Lieu- er Memorial. It will begin at 7.45 o'clock and is to be an informal affair. A good time is promised all by the committee in charge who have planned many features for the dance. Special emphasis has been placed by the committee upon one novelty dance, the denounced that any member of the Club tails of which have not yet been di-

All available tickets have already been sold which limits the number of courecommend the applicants for member- ples to one hundred and fifty, and abship. It is not absolutely necessary for solutely no tickets will be sold at the the men to do this but it is considered door. To those men who have paid advisable for it makes admission much the dormitory tax, brown tickets have easier when recommended by the Club. been distributed, and no man who does At present, plans are well under way not live in the dormitory will be adfor a dance to be given by the Club in mitted if he presents a brown card. the Walker Memorial in about three This will be strictly adhered to by the weeks. It is intended to limit the committee. "Fish's and Dick's" Fammusie.

Refreshments will be served free. Dance orders are now available and tunity. can be made to accommodate as many may be obtained from any member of the committee which consists of P. Swasey '19, chairman; H. J. Daube '19,

The Archbishop of York occupies a position in the Church of England second only to that of the Archbishop of Canterbury, and is also a member of the House of Lords. The present Arch-bishop is the eighty-nineth in succession, since the archepiscopal see of York was created about the year 604. He is the son of a Scotch Presbyterian clergyman who was Moderator of the Presbyterian Assembly of Scotland, the highest of-Lang received his education at the Universities of Glasgow and Oxford, at the posted in a few days definitely setting as a curate in the slums of Leeds, as vicar of the University Church of St. Stepney, and in 1907 he was elevated to man of extraordinary abilities.

For the last three and a half years, Hereafter all notices concerning Archbishop Lang has been particularly either the cast, chorus, or the orchestra active in many kinds of war work. He will be placed on the Bursar's bulletin has often taken the position that clerboard and all men will be held re- gymen should not claim exemption from sponsible for such notices, so the man- war duties, but should fight in the ranks

notices on this board. The chorus will in Boston on the evening of March 9, rehearse next Tuesday in the Caf at 5 and will preach in Sanders Theatre, o'clock. A week from next Thursday Harvard University, on Sunday morning, and every Thursday thereafter the Trinity Church in the afternoon, and management will meet at 8 o'clock. St. Paul's Cathedral in the evening. This will include the freshmen assist- On Monday evening, he will speak at a mass meeting presided over by Governor McCall, and on Tuesday evening, at another mass meeting in Fancuil Hall presided over by Mayor Peters.
After leaving Boston, the Archbishop
will speak at Yale University, and will visit Cleveland, Chicago, St. Louis, Cincinnati, Philadelphia, Baltimore and Pittsburgh. He will spend Easter Day in Washington, and from there will go On Saturday evening the second to Canada, returning to New York in time to be the guest of the House of Bishops of the American Episcopal Church at its meeting on the 10th of April.

Archbishop Lang is the first Archhishop of York and the second English Archbishop to visit the United States.

TRAINED MEN REQUIRED FOR ORDNANCE DEPARTMENT

THE TECH is in receipt of a communication from Allen W. Jackson '97. representing the Civilian Personnel Division of the Ordnance Department, U. S. Army, in which he states that the Government urgently needs technically trained men for the Ordnance Department. Much difficulty has been experienced in obtaining technicians to fill the many attractive positions which number of students in the government ous Jazz Band has been secured for the the Department offers and graduates of evening, and this insures excellent technical institutions are especially needed. Men who have worked in shops, also have an excellent oppor-

> Men of draft age who have not been called are eligible for positions in the Ordnance Department, and according to R. Gilbert, M. Whitaker '20 and W. Mr. Jackson, they should apply at Barron '20. once if they have the necessary quali-The patronesses are Mrs. Richard C. fications. Information concerning the Maclaurin, Mrs. Earl Millard, Mrs. work can be obtained from the Ordnance Department, U. S. Army, Civilian Personel Division, 45 Bromfield Street, Boston, Mass.



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The Editor-in-Chief is always responsible for the opinions expressed in the editorial columns, and the Managing Editor for the matter which appears in the news columns.

IN CHARGE THIS ISSUE

K. Roman '20......Night Editor G. Russell Steininger '21......Assistant Night Editor

FRIDAY, MARCH 8, 1918

IS DEMOCRACY A FAILURE?

THE spirit shown by the American troops under fire has sent a thrill of pride and joy throughout the country. Yet this determination, grit, and courage is nothing more than we have expected our boys to show; it is no more than American soldiers have always had the reputation of exhibiting. Why are we always confident that our fighting men will prove to be of sterling qualities?

Recently Professor Ralph Adams Cram of the Institute published a book, "The Menace of Mediocrity," in which he intimates that the goal toward which the Allies have set their faces was hopeless from the beginning. He is of the opinion that democracy is a failure; that it is a "menace" rather than a "blessing."

Professor Cram backs his opinions by a summation of the German successes and the Allied losses. Doubtless, he has in mind the great contrast between the attacks of the Germans, and the resistance of the Russians. But can the Russian soldiers be considered as men imbued with the true spirit of democracy? Better to contrast the German supporting, thus leaving but twentytroops with the French and American forces. These soldiers come seven per cent. dependent entirely upon from old republics; republics in which the spirit of liberty and equality thoroughly permeates the people. It is for this reason that we are confident that our men will fight unfalteringly for their ideals. Can the apparent courage of the German gunners chained to their guns and fighting for their lives, be considered on a par with the courage shown by our boys in the trenches?

Professor Cram further suggests that democracies are becoming inefficient and are in a state of progressive degeneration because great men are so seldom produced in countries governed by popular voice. It is true that so little power comparatively speaking, is vested in any one man in a democracy and hence no powerful, and highly influential personalities are developed. Is democracy to be measured, however, by the number of great men it can produce, or is it to be judged by the degree of independence and individuality reached by its citizens? Certainly, the present dissatisfaction of the Germans of the middle class on the pending question as to whether does not be peak success for imperialism.

Considered from the standpoint of the spirit of its soldiers, and measured by the comfort of its common people, democracy is not a failure.

A SCIENTIFIC RESEARCH SCHOOL.

R. ARTHUR GORDON WEBSTER, a Harvard graduate, now a member of the faculty of Clark University, regrets that the Harvard graduate school for engineering was merged with Technology, giving as his chief reason that the character hoped for in the graduate school was lost by this move. He further states his belief that men of the type of Lord Kelvin, and Barrie de St. Venant are sadly lacking in this country, and suggests that a research school of the highest quality be established at Harvard with the funds left by Gordon McKay. A school that will accommodate a dozen or so students by disappointed with the meagre show is to his mind to be preferred to a larger institution.

Dr. Webster says Technology is chiefly an undergraduate school; and the laboratories here, while good as far as they go, do not go

nearly far enough.

If such a school as Dr. Webster suggests is to be founded, would it not be far wiser to establish it at Technology, where engineering and science is looking more and more for its following, than at Harvard, where already a graduate school of science has failed?

Furthermore, the facilities are such at the Institute that a research department of highest quality might be established at far less expense and with far greater efficiency of operation than at a University where much less attention is paid to engineering.

Is it not more advantageous to science and to the country to urge the authorities to continue their endeavor to find a way to use the Mc-Kay millions for establishing a research school at Technology?

The Question Box has been inaugurated for SERVICE. So many questions have arisen, and so many doubts have been expressed among both the student body and the Alumni about the relations of Technology and Technologians to the war, that the WAR TIME TECH has deemed it advisable to establish a medium for clearing up these difficulties. It is strongly desired that neither the Alumni nor the undergraduates will hesitate to send in any questions that concern them directly or any that they think will be of benefit to Technology in common.

Address all inquiries to The Question

Box Editor, The Tech. The name of the questioner will be withheld from publication, but each letter must be

The Question Box is for YOU personally. Be sure you use it!

Question Box Editor, The Tech.

Dear Sir: Is it true that Technology and Harvard are considering the feasibility of having a dual meet in boxing and what action has been taken by the Institute to have a boxing team represent it, in the event it is decided to hold such a Sincerely yours,

Yes, they are considering such a meet. Boxing is a new sport at the Institute this year, but by allowing the freshmen to substitute it for the required physical training, a great many of the first-year men have been induced to come out. Mr. Boutilier has been secured as coach and in the course of a few months has developed some excellent material which would serve well as the nucleus for a winning team. 1t is almost a certainty, judging from the interest shown by the students, upperclassmen as well as freshmen, that in the future boxing will become an established sport here and that a team will be formed to represent the Institute in meets with other colleges.



IOWA-An interesting investigation at the University of Iowa shows that thirty-eight per cent of the present freshman class are self-supporting, that thirty-five per cent. are partially selftheir parents for support.

GRINELL-It is probable that a quadrangular track meet, the first of its kind in the state, will be held at Ames some time this month, in which the and Drake, will be the competing colleges. The arrangements are at present being made by the athletic directors of the interested schools.

DARTMOUTH-Nineteen games comprise the Dartmouth baseball schedule for this spring. Tufts, Brown and Amherst are the leading rivals for honors. It is possible that the schedule will have to be cut if the faculty decide favorably the spring than originally planned.

COLUMBIA-Classes which were reently announced as being cancelled on Modays in conformity with the fuel Administrator's ruling will be held as usual. The action of the university authorities in announcing the closing was purely voluntary, educational institutions not being with Mr. Garfield's classification, and that the crisis has apparently been passed in New York City it is thought that the re-opening is justified.

TEXAS-The fiftrst call for varsity track aspirants brought out only twelve men Saturday. Coach Juneau was greatof interest and is considering ways and means of rousing the student body.

CORNELL-Sixty-three prominent ariculturists will co-operate with the faculty in conducing the Farmers' Week program which commences February 11. The program deals almost entirely with

MISSOURI-Only sixteen foreign stulents are attending the University of Missouri this year, whereas formerly the number has been considerably greater. Ten nations are represented by this small group, however. As usual, the war is given as the reason for the deoreased registration.

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"MAT" BRUSH SPEAKS

(Continued from page 1)

pressor down from the top of an engine to "Mat," who held them just long enough to drop them in the easiest manner and place, but there was one particular cap which must be gently set down. Although he had no gloves on his hands, the young man held on to the hot metal, severely burning himself, until he could set it down gently. His case was investigated by a head of the company and the incident led directly to his advancement.

Although these factors are the most important in engineering success, technique is something not at all to be disregarded even in a position of chiefly business work. This fact is well brought out by an experience of President Brush in his former capacity as vicepresident of the Boston Elevated Railway Company, in which his mechanical ability stood him in good sted. He was inspecting the Auburndale power station when a chief machinist questioned him concerning the good qualities of a particular bolt and lock nut. Instead | Kennison '18, and Mackey '18.

of disdaining from manual labor, in his high position, President Brush swung a hammer against the bolt in such a business-like manner that the workmen were immediately convinced that they had to deal with a man who knew what he was about.

From the position of vice-president, Mr. Brush soon arose to his capacity of president of the most complicated street railway system in the country. Because of its geographical, social, and public service situation, the system can be but a slightly successful enterprise financially. The enormous expenses entailed by repairs, salaries, and obligations have so far exceeded the profits that the condition of the road at the present time is a very serious one. But in the face of all this, spending often the greater part of the day and night in his office, President Brush has me aged the situation and only so by calling into use all the things which opportunity, perseverance, and concentra-tion have taught him. "Let these factors influence and lead you and success will be attained" were the words of advice meted out by the speaker to all.

Before the talk an election was held for the electoral committee of the society, the following men being chosen: A. Russel '18, Banks '19, Loucks '19.



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WHAT WILL BE THE EFFECT OF THE WAR ON THE CURRICULUM OF OUR COLLEGES?

Reports Show That Engineering Subjects Are Becoming More and More Popular at Expense of Literary Studies

by college professors and others interested in college affairs. There is already a marked tendency to cut out all of the so-called "useless" subjects, but this is a work that cannot be done on the spur of the moment. The course that might be perfectly "useless" to one student might be very "useful" to another. There is one predominating fact, though, and that is that scientific courses are receiving more and more consideration not only from the faculty but also from the students, while the studies in fine arts and similar subjects are slipping into the back-

This fact is strongly brought out in the following editorial which appeared in a recent issue of the Harvard Illustrated and in which an attempt is made to explain the exceptionally low marks of students which have been reported by a number of the leading academic

"The Illustrated has heard many explanations why twice as many Harvard men as usual are reported 'officially' below in their studies. The Illustrated thinks that the mere theory of unrest is not the real reason, but that there is anoher and more poent one. In the great number of men 'below' in their studies, one does not find men 'low' in their military science, or in French, or in chemistry. Briefly, men are not 'low' in those studies which are clearly useful. The Illustrated cannot get access to the college records, but it ventures to say, and thinks that facts will substantiate the statement, that all useful courses are in fairly good shape as re gards marks, that all unuseful courses are those in which men are low. There are exceptions, of course. One man, prominent in college, got an A in military science, and D's in everything else. Another man who got a B in military science and good marks in his chemhis fine arts. He explained to a lot of jects. The Illustrated has long felt that many. much of a college education was a luxury and as far as practical affairs, it majority. Men tell with great happiness that they are to learn how to do vate. practical things, build bridges, etc. Any article that says Harvard men are not working tells a deliberate untruth; there is more work done than ever, but on different, and on useful subjects."

Another thing which substantiates the becoming more and more popular is the fact that, while the marks of students attending academic colleges are lower than usual. Institute students are showing a comparative marked improvement in their work. This is true esnecially of the men in the two upper classes, there being from twenty-five to forty per cent fewer "notes" sent to men in these classes this mid-years than were sent at mid-years of either of the two preceding years.

While, of course, this decrease is due to some extent to the fact that these has been more strict.

The real reason for the favorable showing made by the upper classes this year seems to be that these men, realizing the value of the engineer in the war and being able to see just what relation their present work will have with they can, and to keep their bodies in their future work in the service of their covernment, have freed themselves of the unrest which has inflicted most college men and, consequently, have "buckled down to do their dammedeat."

two lower classes at the Institute is tering what you take in college as long London Branch. London two lower classes at the institute is terming what you mind is all right, it's Avia. Cps., Ohio State College.

The effect that the war will have up- is not unexpected, as the men in these on the curriculum of our colleges is a classes, unlike the upperclassmen, are thing that is causing much speculation not able to see just how their present work will be of use to them when they get into the service and then, since their graduation is so much more distant, they do not feel as sure that they will ever be able to complete their course.

Just how much value some academic graduates in the service place upon the knowledge which they gained while at college is clearly brought out in an article under the head, "Notes of a 'Buck' Private," which appeared in a recent issue of the Harvard Alumni Bulletin. Two excerpts from this arti-

"Let it be said at the start that the merit or demerit of life in the service, and particularly of life in the ranks, should not in any way influence able young men. Their duty is very clear; they must help, in some way or other, win the war. Also, this article is a personal discussion, a consideration of contrasts that have been part of my own life. Many images come to mind: environment is so strong that a clear point of view is hard to attain. But shall be as short as possible.

"Until last winter I was, I suppose, what most of the world calls a rich young man. That is to say, I had enough money to avoid worry about the ordinary luxuries of life. A great many doors of society were open to me by reason of long-formed family as sociations. I went to a very fashion able boarding-school, and afterwards to a large university. I remember, and wonder, sometimes, if they ever really happened, dinners I have had in the ponderous edifices along Bellevue Avenue, in Newport, where bumble-bee waisted flunkies bore aloft heavy silver -sometimes gold-dishes. I remember parties in New York, Boston, Philadelphia. It was pleasant to start out each evening about seven, top-hatted, with a stick. In college, and in two or three cities, I acted the part of a young clubman, a 'man about town.' Luxur-

ies are so agreeable. "Yet my chief interests were aesthetic ones, and my college days, aside from the friendships of them, were valued accordingly. I studied hard enough to keep a keen interest in these things, and what I didn't know, I 'bluffed.' Society is gullible. I talked about Zuloaga twice before I saw his paintings. With beautiful fluency and complete ignorance I discussed the 'Agamemnon' of Aeschylus, the 'Poenissae' istry courses, fell down 'miserably' in of Euripides, hydraulic machinery, the us, 'What's the use of this stuff now?' government. It made no difference; The same remark has been made time I knew a little, I bluffed superbly, and and again. The Harvard students are I revelled in the joy of 'holding' dinner working harder than they have ever tables. So you see how it was-everyworked, but they are working on differ | thing to look forward to, little to reent subjects, and only on the useful sub- gret. Life was goods: friends were

"When the war came I was considering literature as a protession. 1 was dross. That view only held by a tried for a commission immediately, but minority last year is now held by the unfortunately missed it. Influence majority. Men tell with great happididn't work. So now I'm a 'buck' pri-

"I sleep in a tent, stand in line in any weather for 'chow.' I dress because my work demands it, most of the time in overalls, and I do what I'm told. I have emptied garbage cans and cuspidors, chopped wood, shovelled coal, statement that engineering courses are dug holes, done clerical work and carpentering work. I have been velled at by irate 'non coms' for being a fool.

"They were quite right. A fool is one who is ignorant, you see. I can tell you things about the meals at Agathon's house, when Socrates died, and drank from the wine cooler, but I had no idea until quite recently how to do a great many of the jobs I've mentioned. I remember reading, by the way, F. W. Taylor's 'Principles of Scientific Management.' It tells you, among other things, how to shovel with a minimum of effort and for a maxiclasses are smaller now than formerly, mum of results. But when you are one nevertheless, this is nearly entirely off- of three men who are getting coal out set by the fact that the work has been of a freight-car that must be moved in made more intensive and the grading two hours and a half, you forget what he said or wonder if he ever shovelled. Of course, I drilled awkwardly too. They were quite right—I was a fool."

". . . Tell the boys in school to work as they never worked before, to study chemistry, get all the military training good condition. If I had my college course to take over again, I'd take more chemistry, mathematics, and less English and philosophy. This is no time for dreamers, it is the age of doers. While the scholastic standing of the And while this dope about it not mat- Devens.

the man who knows as well as the man who has the capacity to learn, who gets ahead in the army, and every healthy young man today in college and out should and must look forward to a career in the fighting forces of the country.

"The man who has the capacity to learn gets his chance sooner or later, but the man who says, I am an expert in chemistry, or something equally valuable, is snapped up right away. What did I know when I came here? Tolstoi and Thomas Hardy, Browning and Kipling. As a result it was two months before I even got a chance to

HELP!

In order to keep its military file of Technology Men in Service up-to-date, The Tech earnestly requests its readers to send in more complete information concerning the men whose names are printed in this column.

The Tech is co-operating with the M. I. T. War Service Auxiliary and the Alumni Association in keeping the Honor Roll, and all data regarding men in Service will be communicated to the two latter organizations.

It is important that YOU keep in touch with us, Mr. Technologian. Address all information of this character to the

Military Editor, THE TECH Charles River Road Cambridge, Mass.

MacALISTER, ALEXANDER G., Jr., '18, 3rd O. T. C., Camp Upton. McFARLAND, ARTHUR W. '19, Gas

Def., San. Cps., or Co. M, 302nd Inf. McFARLIN, CHARLES K. '14, was with U. S. Nav. Avia. Det. at M. I. T. MacLEOD, NORMAN, D. '14, Capt., Adjt., 103 Regt., 6th F. A., A. E. F. McNARY, H. L. '18, in Military

MEANS, ROBERT S. '19, Co. T. Bat.

A, P. O. C. B., 301st F. A.

MOORE, L. E., '02, Capt., 301st Engrs.
Staff, care of D. G. T., A. E. F. MORRISON, A. F. '12, Lt., Ord. Dept.,

temporarily at Wash.
O'BRIEN, JAMES S. '17, School of Military Aeronautics.

OSBORN, STANLEY H. '15, 1st Lt., Med. Sec., O. R. C. PARKS, GEORGE U. '19, Pvt., Amer Air Serv., Paris.

PIGEON, F. B. '11, 2nd Bn., F. A., Plattsburg. POLLEY, EDGARTON G. '18, 2nd Lt.,

Ft. Leavenworth. POND, THOMAS C. '15, 1st Lt., 1st Btry., R. O. T. C., Fort Meyer.
PRATT, HAROLD G. '19, was with
U. S. Nav. Avia. Det., M. I. T.

PRAY, IRVING R. '11, Pvt., Co. B, 1st U. S. Pioneers.

St. Paul, the Russian PROUTY, T. R. '12, 2nd Lt., 301st made no difference: Inf., Camp Devens. REED, JAMES D., Jr., Nav. Constr.,

Navy Dept., Wash. RHODES, W. S. '95 or '97, 1st Lt., Amer. Univ. ROCKFORD, J. L. '99, 2nd Bn., F. A.

Plattsburg. ROGERS, CARL, 5th Additional Co.,

Depot Brig., Camp Devens. ROSENTHAL, CHARLES H. '15, Pvt.,

Inf., or Ord., Camp Sherman. SHERMAN, FORREST P. '17, U.S. N. SHIPPEY, WEBSTER '17, Candidate, C. A. C., Ft. Leavenworth.

SHIRER, HAMPTON F. '18, Amb. Cps. STETLER, M. M. '18, applied for Avia. Serv., U. S. R.

STEWART, U. S. '15, Mach. Gun School. Springfield Armory.
STONE, NELSON '15, O. T. C., Fort Niagara, New York.

SULLIVAN, W. H., Lt., jr. gr., Asst. Nav. Constr., Portsomouth Navy Yard. TOWNE, LOCKWOOD J. '09, in Mili-

tary Service. TRAVIS, L. L. '02, 2nd Lt., 8th Engrs.. Ft. Leavenworth.

TRAVIS, L. L. '15, Pvt., O. D., 163rd Depot Brig. WALSH, J. H. '07, Lt., Asst. Nav.

Constr., Wash. WARREN, WILLIAM H. '14, 1st Lt., WELLS, S., Lt., jr. gr., Asst. Nav.

Constr., Wash. BIGELOW, EDMUND C. S. '20, was in Amer. Amb. Serv.

BOND, NELSON A. '18, O. T. C. BURRAGE, SEVERANCE '92, Maj. CHRISTIE, JOHN '09, Reported draft-

CLARK, ROBERT C. '96, 2nd Lt.

Cav., N. A. CLIFFORD, WALTER, was with Nav. Avia. Det. at M. I. T. as Instr.

CONNIERS, NORMAN D. '19, O. T. C., Camp Upton. COPELAND, WILLIAM '93, Pvt. or

Corp. Pa. N. G. COWLES, W. C., Jr., '18, U. S. N. R. DENBOW, D. F., 1st Lt., O. R. C. DRAKE, ALLEN F. '18, Inf., Camp

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DEEPEST WELL IN THE WORLD

Well Drilling Near Clarksburg, W. Va., Breaks Record

The deepst well in the world, already 7,363 feet deep, is now being drilled on the Goff farm, eight miles northeast of Clarksburg, in northern West Virginia. Until January 24 the record for depth had been held by a boring at Czuchow, in Silesia, which had reached a depth of 7,349 feet, but on that day Dr.

White, the state geogolist of West Virginia, anounced that the Hope Natural Gas Co. had driven the bit to a depth of 7,350 feet, one good American foot in excess of the German record. Morequate power and tools are at hand the prospects are good for driving still farther down into the crust of the earth and winning the pennant by a considerable margin.

Seven thousand three hundred and sixty-three feet is a very little less than one and a third miles. The depth of this well exceeds the height of Mt. Washington (6,293 feet) and of Mt. Mutchell (6,717 feet), the highest mountain in the eastern United States and is greater than the distance to which many of the Rocky Mountains looms above the level of the foothills or plateaus on which they stand. It is over balf a mile deeper than the Grand Canyon of the Colorado in Arizona. In fact, the bottom of the Grand Canyon at the foot of the Bright Angel Trail, which is approximately 2,400 feet above sea level, is about 1,300 feet higher above the sea than the surface of the ground at the Goff well. The well goes nearly half a mile farther down into the earth than the deepest mines in Michigan, Brazil, or Europe. Several oil ment today of machines which the about three miles. In 1905, from Sept. wells in California, in the Southwest, in West Virginia, and in Pennsylvania have exceeded 4,000 feet in depth, and tained as an average for a flight of 1357 even twenty-four miles, at a speed of one near McDonald, Pa., about 14 miles miles, more than double the most opti- about thirty miles an hour. Thereafter west of Pittsburgh, reached a depth of

The thickness and character of the beds of rock rassed through in boring the well are being studied under the direction of the state geologist. All the beds are composed of materials that were once sediments, and most of them settlings in sea water which has at various times covered this part of West Virginia. Interesting and important observations of the temperature of the rocks at different depths in the well have been made by the United States Geological Survey, Department of the interior, in cooperation with the State Geological Survey, with the object of determining the rate at which the temperature increases downward in the outer crust of this part of the earth. C. E. Van Orstrand, of the Survey, found that at a depth of 7,000 feet in the well the temperature is 152 degrees Fahrenheit and that the rate of increase at this depth is about one degree in 51 feet of depth. This shows that series of years. the outer crust of the earth in his region is relatively cool, for in ny othmuch more rapidly with increase in a man who spent much of his life in depth. Even at some places in the United States, according to uncon. tion with small models, having about firmed observations, the temperature in 13 feet of wing length, for example, creases at the rate of one degree in a which he could launch into the air and acteristics worth noting in respect of vertical distance as little as 25 feet, and then observe closely. Being a thorough the general form of prevailing types that within a few hundred feet of the surface. Nevertheless, Mr. Van Or- ley achieved a good deal in this way. the shape of their wings. There is strand estimates that the temperature In the end he equipped one of his first the type with "swept-back wings, of the rocks beneath the Goff well will gliders with a steam engine, developing exceedingly stable; second, the "stagbe found at the boiling point (212 de- one and a half horse-power. So pro- gered" wings; and third, the dihedral. grees F.) at a depth somewhere around pelled, it mounted to a height of eighty 10,000 feet.

The Goff well is near the center of the great Appalachian coal field basin, or trough, and is being drilled in search of deeper oil sands than have yet been reached in this part of the basin, The the "Clinton" sand, a formation of oil across central Ohio from Cleveland construction of the engine for his plane the southeast beneath successively way to Clarksburg. If the drill correach the Clinton sand beneath the C farm, which is on an anticline or small feet and was capable of carrying 500 may possibly find gas or oil pent up inder tremendous pressure and ready ing flights a day longto escape in enormous volume. Hence, the test not only excites the curiosity of the public and is of great scientifi interest to geologists, but is also of practical value to the oil men, by whom it is being closely watched. If the in the Clinton sand in this part of the this boring ends in disappointment it basin it may lead to the development is probable that similar wildcat tests of new oil or gas reserves, and if sub- wil be made in other districts until the sequent tests are successful it may oil men are satisfied that the quest is open a new era in the hitory of the hopeless, but if this deep wildcatting Appalachian oil and gas region. The possibility of discovering such oil and gas deposits comprising new reserves hitherto unknown, is the justification of | able addition to its petroleum resources, the great cost and labor of drilling the test well at Clarksburg, though the best skill of the Nation may be required to reduce the cost of drilling very deep limited, supplies of high-gasoline Ap- sible to make by working all the plants wells to a point at which such work palachian oil.

PROFESSOR E. B. WILSON IN HIS THIRD LECTURE REVIEWS HISTORY OF AIRPLANES

Traces Development of Flying Craft from Gliders to War Planes-Deplores Lack of Aeronautical Scientists

over, the drilling is still in progress and as sufficient length of cable and ade- his course on The Principles of Aero- machine from getting away his course on "The Principles of Aero-machine from getting away. nautics." "Ever since the first sucThe public, which had been cessful work of the Wrights, aeroplaning has not lacked popular and commerciation interest here," he continued, "but the scientific study of aeronautics has been "Langley's Folly." The government almost a scientific study of aeronautics has been "Langley's Folly." The government almost a scientific study of aeronautics has been "Langley's Folly." land has many.

"If in the face of this lack we sucof the air on the western front, which is now so greatly desired by us and by our Allies, we may count ourselves very fortunate. For we shall be in large part forced to depend upon what others fied with the stability and dirigibility they are still able to give us."

history of aeroplaning, from the first and one of about a minute. They then hesitating experiments with gliders in retired to Dayton and went on with American makers claimed had developed 26 to Oct. 15, they accomplished flights a record of 138.4 miles per hour, sus- of seven, twelve, fifteen, twenty-one and aeroplane even so late as 1914.

Wilson's lectures on aviation.

The Wisdom of "Langley's Folly"

Mr. Wilson first discussed the experimentation carried on with gliders, the light machines, either biplane or monoplane in type, which have no engines and employ the force of gravity as prime mover. The men whose work he noted in this connection were Lillienthal of Berlin (1893), Herring and Chanute in America (1896), and the Wrights (1900-1902). The flights of the gliders were very short, seldom covering more than two or three hundred feet. They came noted for their work, together attracted no great attention and the with Grahame White and Curtiss. feeble American interest in aeronautics was chiefly kept alive by the Aeronautical Almanac painstakingly published by James Means of Boston during a

lives in full-sized gliders, Samuel P. Boston, turned to careful experimentascientist and competent physicist, Langflight with the air plane.

Wilson, was of very high order, producchine had a wing area of 1040 square it wallowed in the wind. all it should have been capable of mak.

first test. It had been mounted on at of the hydroplane.

"Credit for the invention and de- | large houseboat in the stream and relopment of the dirigible balloon must equipped with a catapulting device, debe assigned elsewhere, but the aeroplane is strictly an American product" which at first represented such a seriable. plane is strictly an American product," ous difficulty in all early experiments said Professor Edwin B. Wilson of with aeroplanes. In the original test a Technology in closing his lecture at the forward stay caught, and in the second

The public, which had been consistentgreatly neglected. Technology has been so withdrew its support. As a matter fortunate in the possession of an aero- of fact, Langley was no hit-or-miss dynamical laboratory, but as a matter empiricist, Professor Wilson affirmed, of fact we have very few aeronautical but a thorough physicist, and his mascientists, whereas a country like Eng-chine was really capable of the performance he expected of it. In proof, there can be cited the fact that in Sepceeded in establishing that supremacy tember, 1914, Curtiss took the machine and flew it over Lake Cayuga.

The Wrights Win Conquest

By 1903 the Wright brothers, satishave found out, and upon the assistance of their gliders, were ready for their first efforts with engine-driven planes. The body of Professor Wilson's third In that year they made four such lecture was devoted to a review of the flights, three of about twelve seconds, 1893 to the manufacture and manage- their experiments. In 1904 they flew mistic anticipation entertained of the they retired again to Dayton, perfecting their patent claims and working The members of the Navy School of Aeronautics at Technology continued in attendance at this third of Professor Myer to make an exhibition flight for the United States Army. Unhappily, his machine met with an accident in the air and fell, Lieutenant Selfridge, a passenger, being killed, and Orville being seriously injured. During this time Wilbur Wright was busy making flights in France.

There Santos Dumont had turned his attention to aeroplaning in 1906, and, with his already great popularity as a balloonist, was the first to fire French interest in the new type of aviation. Henri Farman and Bleriot were, of course, among the men who then bewith Grahame White and Curtiss.

Of the machines which Professor Wil son had thus far shown on the stereopticon, he had remarked their lack of trimness and the unsubstantial character of their construction and of their While other men were risking their landing gear. Some were of the tractor type with motive power in front, er regions the temperature increases Langley of the Smithsonian Institution, others of the propeller type with motive power behind.

Science and Specialization

Today, he said, there are three charof aeroplanes, all having to do with

Professor Wilson described the adfeet. He became convinced of the prac-, vance achieved through the abandonticability of controlled and sustained ment of sheerly empirical methods and the adoption of more closely scientific With the help of an appropriation of procedure in the study of aerodynamics \$50,000 from the Bureau of Ordnance as carried on by Great Britain's nahe continued work on his types, most tional commission for aeronautics. sand upon which most hope is based is of them tandem monoplanes, and final- These led to the determination of the ly scaled one up to a size that could actual factors in stability, speed and Silurian age, which is prolific of gas and carry a man. To his assistance in the controllability, and showed how planes should be constructed to meet them. It nearly to the Ohio River. From its came Manley, of the engineering school was discovered, for instance, that there outcrop this formation dips gently to at Cornell, whose work, said Professor was such a thing as too much stability The Dunn machine, still on exhibition younger formations nearly if not all the ing an engine of weight and power in the Burgess plant at Marblehead, really wonderful for its day. The ma- proved this fact. It was so stable that

Also scientists and builders came to upward fold in the shallower strata, it pounds of fuel and lubrication. All in appreciate that there must be several types of machine for as many purposes-heavy planes for bomb dropping. Through a pure accident in launching, very fast and light machines for scout however, the machine fell into the purposes, another type for the fighting Potomac River upon the occasion of its planes, and of course also suitable forms

well strikes a valuable oil or gas pool will be economically practicable. If meets success, the entire Nation will welcome a most timely as well as valuand the gasoline consumer may well rejoice at the prospect of new, even if

ICE PLANT MEN ARE WARNED TO BE SAVING OF AMMONIA

The Food Administration authorizes the following statement:

The United States Food Administration has issued an appeal to owners and operators of ice making and refrigerating plants to do everything within their power to stop all waste and leakage in their use of ammonia.

"During 1918 the Government should have for munitions alone 20,000,000 pounds of ammonia more than it is posproducing ammonia in this country to

their maximum capacity," the Food Administration declares in this appeal.

Shortage In Summer

"This shortage will be greatly increased by the ammonia that will be furnished ice making and refrigerating plants, but it is hoped that by appealing to the patriotism and business sense of all ammonia users, and urging them to stop all waste and leakage, that the usual consumption may be curtailed to such an extent as will permit at least the most efficient plants to run; particularly where natural ice is not avail-

"A saving of 25 per cent in the ammonia consumption of ice and refrigerating plants would mean several million pounds annually for munitions. Each gant in its use will naturally be closed pound will make 20 hand grenades. Late first.

returns show this saving can be accomplished if all will stop the leaks Bonus System for Employees

As a means of effecting ammonia savings of owners and operators of plants are urged to institute a bonus system by which employees shall be rewarded for bringing about economies, and the Food Administration suggests that they be given 50 per cent of the value of what they save.

The Food Administration will call up. on each plant to report on the first of every month exactly what they are doing in the saving of ammonia.

It is questionable just how long am. monia can be spared for refrigeration, the Food Administration warns, and points out that plants most extrava-

We W

THIS WILL BE THE LAST WAR

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