

THE SUBMARINE A WONDER OF THE DEEP

Prof. W. A. Titsworth Tells Students About This Wonder

Prof. Titsworth secured his material for this lecture for the most part from Marley F. Hay's book "The Secrets of the Sub-Marine." This book is now in our library.

In dealing with the history of the submarine, the first sort of a contrivance that might be called a submarine was seen in the early part of the 17th century. This consisted of an air-tight wooden diving bell. Then came Bushnell one hundred and fifty years later and later Robert Fulton. But the automobile torpedo, invented by Robert F. Whitehead, was the determining factor in the shape of the submarine. Of late years Mr. Hay, the author of the book, and Mr. Simon F. Lake have done very much in developing the modern American type, especially in the finer details.

A submarine must have a variable weight in order to sink and its weight must not change after submergence else it will either sink deeper or come to the surface. The depth to which a vessel can submerge is limited to a very small number of feet because of the immense pressure. The speeds of a vessel submerged are much less than on the surface.

The modern type is a long horizontal cylinder symmetrical along horizontal axis and it is usually incased in an outer shell which is nearly pointed at both ends. A conning tower and hatchways offer means of entrance from the center and the top. Two periscope tubes are the only other projections. To increase its weight and so destroy buoyancy submarines are fitted with a number of tanks into which water may be admitted until buoyancy is destroyed and the vessel is ready to sink. The boat is now said to be in diving trim. The actual submergence is not accomplished by admitting more water into the tanks but rather by starting the submarine in motion and steering down by diving

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BASSETT-BURDICK

Miss Rachel Burdick, daughter of Rev. Clayton A. Burdick of Main St., and Leon Bassett, son of Mr. and Mrs. William H. Bassett of Alfred, N. Y., were married yesterday afternoon at 5:30 at the bride's home before a gathering of immediate relatives and friends of the families. The marriage ceremony was performed by Mr. Burdick. Miss Ruth Burdick, sister of the bride, was the bridesmaid, and the groom was attended by Julian Crandall of Ashaway. Miss Lois Wells of Ashaway played the wedding march.

The bride was attractive in white taffeta and carried a bride's bouquet of roses, while the bridesmaid wore yellow chiffon over satin, carrying Aaron Ward roses. Refreshments were served after the service.

Early in the evening Mr. and Mrs. Bassett left for Boston for a few days' stay at the completion of which they will go to Worcester, Mass., to make their home in a furnished apartment.

Mr. and Mrs. Bassett are graduates of Alfred College, class of 1916. Mr. Bassett now being producing engineer of the refractories department of the Norton Co. of Worcester.—Westerly, R. I., Sun, Jan. 13th.

MANY CHANGES TAKE PLACE IN STUDENT ACTIVITIES

Because of the offices made vacant by the men who have enlisted in U. S. service, many changes have taken place, and nearly every organization in the college has at least one new official. Perhaps of all others, the Fiat staff has experienced the greatest number of changes. Harold Reid, who was formerly assistant business manager, has become business manager in place of Fritjof Hildebrand, and at a recent meeting of the student body, Elmer Mapes '20, was unanimously elected assistant business manager. Ray Witter's leave has made a vacancy in the staff. Don Moyer is filling his place.

As to the Agricultural end of the staff, Lewis Gasper has been elected Ag editor to succeed Ralph Mohney.

Anna Savage, '18, who was vice president of the Footlight Club, is now president of the association, she takes the place of Harold Nash. Frank Lobough '20, fills the vacancy made by Geo. Crawford '18, as president of the Athletic Association.

F. H. ROSEBUSH PROMOTED

Franz H. Rosebush, A. U. '07, who resigned his position in the Rochester Schools, to learn the paper business in the Edwards-Nekoosa paper mills at Nekoosa, Wisconsin, has been promoted to the head of the efficiency department, recently established in these mills. This promotion comes on the recommendation of Mr. Jaspersen, an official of the mills, and is most gratifying to his many friends. Herefore Mr. Rosebush's work has been checking up the machinery for the new mills the company is erecting at Nekoosa. He has also been studying the chemical side of making paper, the "cooking" of the chips, making acid tests, etc.

Now his work will be in the office at the Part Edwards mills and at Nekoosa, three miles down the river. This new position carries with it many responsibilities and opportunities. An important phase of the work will be the hiring of the thousand or more mill workers.

TIME OF PUBLICATION OF FIAT MUST CHANGE

Because of the new conservation law, that all places of business must close each Monday for ten weeks, it will be necessary to make some change in the time of publication of the Fiat. It will be impossible to get it out on Tuesday, the customary time, as the paper goes to press on Monday.

Definite arrangements have not yet been made with the publisher, but it is probable that hereafter the Fiat will appear on Friday instead of Tuesday.

PARLIAMENTARY LAW COURSE FOR WOMEN

If enough girls desire it, Prof. Norwood will take charge of a class in parliamentary law the second semester. Of course college credit cannot be given but inasmuch as the women of New York have the vote, a little parliamentary law practice will not be amiss.

The course in Money and Banking will follow Economics I as catalogued, and the course catalogued as Constitutional Law will be changed to European Government.

DEATH CLAIMS ITS FIRST VICTIM AMONG THE ALFRED SOLDIER BOYS

Franklin Fitz Randolph, son of Principal Esle F. Randolph of Great Kills, Staten Island, N. Y., died of meningitis at training camp, Jan. 13, 1918.

Franklin entered Alfred College with the Freshman class in September, 1916, and continued in College during his Freshman year. He was drafted in September, 1917, and entered the training camp later in the fall.

He was a young man of earnest Christian character and made many friends among the students and town's people during his year in College. He was very fond of Alfred and hoped to return had not patriotic duties claimed him.

He was at his home for a brief visit at Christmas time but was suffering from a severe cold. This with other complications led to his death shortly after returning to camp.

Among the many noble young men who represent Alfred University in the service of the country, he is the first to give up his life in this patriotic service. His name and memory will be loved and cherished both because of the intrinsic worth of his character and of the noble cause in which he gave his life.

His two sisters, Ruth and Sara Randolph were called home by telegram on Sunday of this week on account of his death. Alfred College and the entire community extend sincerest sympathy not only to the sisters who are students here, but to all the members of his family.

COLLEGE CREDIT FOR CHURCH WORK

Dean Main has had charge of a small number of men this semester who have been studying the Social Teachings of the Old Testament, and their adjustment to modern conditions. This has proven a very interesting course in spite of the many complications arising from "War and Weather." A canvass of the men in College is being made this week to determine the advisability of continuing the course during the second semester. There should be at least seven who would guarantee to stick by and do the required work faithfully.

If the class is continued the work will cover the Social Teachings of the New Testament.

At least fifteen class periods will be required with about one hour outside reading.

If Dean Main is willing to give his time and effort to this work there certainly ought to be seven men in College and Ceramic School who would be willing to do their share.

1918ERS START THE BALL ROLLING

At a recent meeting of the Senior class its members devised a plan whereby provision was made that each member of the class who is in service will receive a letter from each member of the class every week. According to the plan, each member has a list of the 1918ers in service and writes one letter a week until everyone on the list has been written to. This will not mean so much to us in terms of time or energy,—it is the least that we can do, but it will mean much to the boys who are in camp. Wouldn't it be a good idea for the other classes to follow suit?

1918 RECEIVES LETTER FROM MILTON RANDOLPH

Dear 1918:—

I was, indeed, surprised a few days ago, to get that good long, interesting letter from you. While I have heard a lot about Alfred through my two cousins and others, that was the first letter from the senior class. Of course they are so much busier than other classes, how could a sailor or anyone else expect them to keep him informed of the many happenings at good old A. U.? But just the same, I certainly appreciate the remembrance conveyed in the letter I received.

How sorry everyone must have been when they found out college was going to close on account of the cold weather. I can just imagine all in tears when the news came out??? Of course such a thing never could have happened a year ago! But a lot of unusual things have happened in the last year, for which none of us are responsible, and believe me, here's hoping a lot more will happen in the next year, for which some of us will be responsible.

Since I left Alfred last spring, I have thought, often, of my classmates and collegemates I left there; of that year, then seemingly so long but now which seems only a short time. All summer, I worked on a farm and enjoyed myself, even if those corn rows did seem terribly long sometimes. It wasn't until the middle of July that I began to think very seriously of enlisting in some branch of the service. About that time my older brother and two friends decided to enlist in the navy or at least try to. They wanted me to go with them, but I was still undecided. It is certainly quite a problem to know just what to do in such cases, but I might as well have gone with them for just a week after they had been examined I found myself doing the same thing, and on the 7th of August I was sworn into the federal service. My two friends were accepted and are now on the U. S. S. Kansas, but my brother was rejected and is now expecting a call to go to Camp Dix, any time.

I have been in uniform and on duty since the first of October. Since then I have been in three different training stations. At present I'm at the naval

Continued on page two

TWENTY MORE STARS ADDED TO OUR SERVICE FLAG

Since the service flag was first made, some two months ago, twenty more Alfred men have responded to the service call of Uncle Sam. In their honor, twenty stars have recently been added to the flag, one of which is a star of gold in honor of Franklin Randolph, who is the first Alfred man to give his life to the cause.

NEW YORK ALUMNI WILL NOT HOLD BANQUET

The members of the New York branch of the Alfred Alumni have decided to forego the pleasure of their annual banquet. Because of the adverse conditions now existing, it has been decided to postpone their get-together until a more opportune time.

CERAMIC ENGINEERS ATTENTION!

There will be a meeting of the Ceramic Society this evening at eight o'clock. Collin and Kenyon will speak on "Casting of Heavy Clay Products."

CONSERVATION COURSES TO BE OFFERED AT UNCLE SAM'S REQUEST

Miss Wood To Direct At Least Two Such Courses

The following message was recently received by President Davis:

The United States Food Administration calls you to its service. Our need is so great that we appeal to you to prepare yourselves as best you can, and to enlist for the great work that must be done.

There will be diversity of tasks and therefore diversity of talent and training can be used. All our questions now center in food; its production, its distribution, its use, its conservation. The more you know about these things the more valuable you will be, and the greater will be your service to humanity.

If you have not already done so, we urge you to pursue studies dealing especially with food, but these should be reinforced by courses in chemistry, physiology and economics. It will be well, too, if you have acquired the arts of public presentation of your knowledge to the people who so much need it.

Fortunately most of our educational institutions now offer courses which give the necessary training for this work, but to the others an appeal is being sent to provide such instruction wherever it is possible.

More detailed suggestions and directions will be published soon. Today your country asks you to resolve to do what you can in this the hour of extreme peril to the democratic peoples of the world.

Faithfully yours,
HERBERT HOOVER.

After a conference with Miss Wood, general arrangements for at least two courses in food conservation and substitution are under way. These courses will be under Miss Wood's direction and will, of course, be very interesting as well as instructive.

The course to be given for College women will probably cover the general food situation in America and Europe, touching on the amount of different staples available for use and transport. More detailed ways of conserving the food supply in the household, suggestions in substitution and "Camouflage" and community saving will all be taken up in more or less detail. Whether College credit will be given for work in this course will of course depend upon the interest displayed among the fair sex.

It is probable, however, that some arrangement will be made whereby this course may be substituted for some regular two hour College course.

There is serious talk of an extension course open to the public, which would consist of lectures, class demonstrations, and outside reading supplemented perhaps by individual household experiments and daily records of savings and substitution.

It is very probable that the presence of any interested men (of course we mean those interested in the subject under discussion) would be tolerated, providing they take a back seat.

GLEE CLUB TO MEET TWICE A WEEK

Regular rehearsal of the Glee Club will be Tuesday evenings at seven and Friday afternoons at five o'clock.

AGRICULTURAL SCHOOL NEWS

Director Wright was confined to his home several days of last week with a severe cold.

The first of a series of lectures on Herd Management was given by Supt. E. E. Poole Friday afternoon.

Farmers' Week is to be held February 19, 20 and 21 this year.

Professor Luther Banta attended the State Federation Poultry Association meeting held in Albany, Wednesday, January 16.

Professor Adelbert Sheffield attended the Cheesemakers' Association meeting at Cuba, N. Y., on Monday, the 14th of January.

C. H. Watson of Anona, Florida, sent to the State School of Agriculture a case of Florida Butterflies.

AG JUNIORS AND SENIORS HOLD SLEIGH RIDE

A merry party of Ag Juniors and Seniors accompanied by a number of college girls enjoyed a sleighride to Andover on Tuesday evening of last week. The sleigh loads left here about 5:30 arriving in Andover at 8:00. Lunch was served in the Baptist church by the ladies of the congregation. After lunch the company adjourned to the Auditorium where the remainder of the evening was spent in dancing. Mr. and Mrs. Archie Bloss furnished the music. The party returned about 1:30 P. M. A pleasant time was reported to have been enjoyed by all. The chaperones for the occasion were Prof. Barnhart, Prof. Klink, Miss Nellie Barkhouse and Miss Cheesman.

COUNTRY LIFE CLUB

The usual good time was enjoyed by the members of the Country Life Club at their regular meeting on Thursday evening of last week. The meeting was held in the assembly hall of the Ag School and a very interesting program was offered. It consisted of the following numbers:

Vocal Solo—Miss Weed
Piano—Mrs. Klink
Scottish Recitation—Mr. Robinson
Parliamentary Drill—Arling Saunders
Gleanings—Mr. Seeley

Miss Angeline Wood acted as critic and gave some very helpful decisions.

LECTURE SERIES STARTED

The first of a series of lectures on Herd Management was given by Mr. E. E. Poole to the Aggies on Friday afternoon of last week. The topic discussed was productive herding in its most important phases. Mr. Poole said "That to have a successful herd one must first like the particular type he is working with. A good grade herd is just as serviceable as a 'pure bred' herd, but grades are more liable to produce scrubs, due to lack of type individuality and hereditary characteristics. The scientific use of the 'scales' and Babcock tester should be more universally adopted. To keep the good cows and to weed out the poor ones is an important duty."

Mr. Poole laid stress on the caution to be used in selecting the sire, for much depends on this decision. It is better to develop gradually into pure than to launch right out at first. Rather than this latter, it is desirable to have one or two pure bred females from good families and breed carefully. Regarding the care of the herd, Mr. Poole said, "good cattle must be kept well in order that the offspring may be strong and healthy. Young calves should be given more attention than is usually given. The disinfection of the naval is of great importance and to take the calf from the cow within twenty-four hours after birth is bad. However, when the cow is diseased immediate separation from the calf is desirable. The feeding of calves is a question requiring much care and caution for the establishment of a good working herd is entirely dependent upon a successful calf crop."

The instructive and interesting manner in which Mr. Poole delivered this first lecture of the series has excited interest and the remaining lectures are eagerly looked forward to.

BACHELOR CLUB GETS NEW MEMBERS

The Bachelor Club, an agricultural society, held their weekly meeting on Wednesday evening of this week. The feature of the meeting was the acceptance of two new members, Anthony and Sauls. This Club has done much to encourage social activity in the University in the past and has gradually grown into prominence.

ASSOCIATION NEWS

Y. W. C. A.

The Y. W. meeting last Sunday night was one of the most impressive and inspiring meetings we have had this year. After the recognition service, when the new members were recognized, as a part of Y. W., by lighting their candles in that of the president, the meeting was taken over by Anna Savage and Enid White. Their topic was "The New America." Some very interesting extracts were read from a magazine on America, and then Mr. Perudian gave a short talk which had to do mostly with the history of the Armenian people. In closing, Mr. Perudian said "Turkey is the mad dog of Asia, Germany is the mad dog of Europe, and before peace can be attained, the mad dog must be killed, or its teeth pulled so it can bite no more."

Y. M. C. A.

The Y. M. C. A. held its first meeting of the new year Sunday evening and a plan was devised which promises to make the Sunday meeting very interesting. According to this plan, the committee will arrange for a series of lectures which will be given by the faculty and association members on current topics. After the lectures an opportunity will be given for informal discussion of the topic.

1918 RECEIVES LETTER FROM MILTON RANDOLPH

Continued from page one

Militia Armory in Brooklyn. I was here about six weeks ago but was sent to Pelham Bay Park, where I received most of the training I have had, which isn't saying a great deal, as I haven't had any training on board ship at all to speak of. I am now waiting to be transferred to a ship for duty, and don't expect to be here long.

The training station at Pelham is somewhat similar to the army camp, but is not so long. There are barracks to accommodate about five thousand men. These are very comfortable, being steam heated. We had a good chance to judge what it is like in the army, as far as the infantry drilling is concerned, for we had plenty of that. Our other training consisted of signal work, in semiphore, wangway, and other methods of signaling. Also lectures on seamanship. Advancement will be slow for one who has had no experience with boats, or who has had no business experience of any great amount. Many fellows qualify for ratings, but are not able to hold them when they go on board ship.

I can't close this letter without speaking of the work the Y. M. is doing. I don't believe there could be anything else to take its place, so far as making things pleasant for the fellows and entertaining them, in their leisure hours. Of course there are many who do not appreciate the work done for them, but many who never realized what the Y. M. was before, will support it in the future in all the ways they can. At Pelham Bay Park, there are two Y. M. buildings, one in the probation camp and one in the main camp. The main camp Y. M. is the larger, as more men are entertained there. It has a large auditorium with a reading and lounging room off to one side. This room has a large stone fire place in one end, and easy chairs, writing tables and a good library, a place as near home-like as it could be. The association men have charge of the athletics and put out a winning football team, which was made up of men from many different colleges.

I wish everyone of you, 1918, a happy and successful new year, as well as the rest of students and faculty of old A. U.

Very sincerely,
MILTON F. RANDOLPH,
Naval Militia Armory, Foot 52d St.,
Brooklyn, N. Y.

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FIAT LUX

Alfred, N. Y., January 22, 1918

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Julia Wahl '18

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Robert Sherwood '19
Enid White '18
Donald Moyer '21

REPORTERS
Donald Moyer '21
Robert Witter '21

BUSINESS MANAGER
Harold Reid '20

ASSISTANT BUSINESS MANAGER
Elmer Mapes '20

AGRICULTURAL EDITOR
Lewis Gasper

TERMS: \$1.50 per year in advance

"The old order changeth and giveth place to new," has never before contained more truth than at the present time. But it is as it should be, for what a monotonous old world this would be to live in were it immune from changes. One of the most significant changes of the new order of things is that women have come into their own in every sense of the word. The woman of today ranks equal with the man in so far as opportunities go, even in the voting question. Of course we are speaking of the American women. But now that the women have the vote what are they going to do with it? Perhaps only time will tell, but we are not dubious as to the result, but nevertheless, it is a great responsibility that will confront the women, as was so well explained to us in assembly a short time ago.

It is in order to help prepare the college women in this respect that Prof. Norwood will offer, next semester, a course in parliamentary practice. We think it is not necessary to argue further as to why every girl in college, who can possibly spare the time, should take advantage of this splendid opportunity. Where there's a will there is a way, and every girl in college who is worthy of the opportunities that have been given her, will not fail to realize this one. It is up to every woman to prepare herself as

IN SOCIETY

THE Y. W. C. A. PARTY

Fashion, in her ever changing moods, takes us back to our youthful pastimes sometimes. Such was her pleasure on Thursday night, the 17th, when the Y. W. entertained her new members at the Brick; for some very old, and therefore quite new games were the order of the evening;—dominoes, flinch, rook, pit, authors,—were there, and the rather more new, but to us grown ups somewhat remote, erector sets, building blocks and clay working articles. From one table to another we passed, equally fascinated with all, equally loathe to have our new location when the bell sounded. And if we had forgotten some of the rules of the games, we soon proved the quality of our memories.

The refreshments too, were quite Hoover-like but old-fashioned, and even the songs we sang were time-tried and proven.

The social committee, under the direction of Miss Ward well deserve the commendation they received, and there were several new members who were glad to be definitely placed as a part of a quite old organization.

A CHAIN OF TEAS!

Something new has started among the girls of our college. What is it? Ask any member of the conference committee of the Y. W. C. A. On Sunday afternoon at five o'clock the committee assembled at the home of its chairman on West University street and were entertained at tea; thus the first link of the chain was welded. The group consisted of six girls and each one brought ten cents which is to go into the conference fund. Within the next two weeks each of these six girls is going to give a tea, inviting five other girls, each to bring ten cents. Thus the chain grows and the conference fund increases. And of course everyone knows that when the fund is large enough it will be divided among the girls to help pay for the best ten days of their four years in college—the summer conference at Silver Bay.

best she can for the new order of things, and college women especially should feel the need of this preparation.

NOTICE ! ! !

There will be an important meeting of the Fiat Board at the Brick, Thursday evening, Jan. 24.

FROSH ENTERTAIN JUNIOR CLASS

In keeping with the traditional custom, the class of 1921 invited the Juniors to a sleighride which was held on Saturday evening of last week. The party which was composed of four "rather packed" but jolly loads journeyed to Andover, going by the way of the "Gorge."

At Andover arrangements had been made for supper in the Odd Fellows Hall, and about sixty rather hungry individuals enjoyed the preparations. After the supper a number of very appropriate toasts were delivered. Mr. Crofoot '21, acted the role of toastmaster, while the Misses Eloise Clarke, Emma Dinsmore and Hazel Humphreys Junior President, did more than their bit" in backing up Mr. Crofoot.

Later in the evening an informal dance was enjoyed and the party made the return trip by way of Alfred Station. The chaperones for the evening were Prof. and Mrs. Clawson.

RED CROSS

Two meetings a week has produced an increase in the output of the local branch Red Cross. We quite finished the work prepared Saturday night, although the attendance was decreased by the Juniors and Freshmen. It was an enjoyable meeting too, for we sang and exchanged pleasantries, read a letter from one of the boys, and contemplated the beauties of the lamp light and the real heat from the coal stove. There is something peculiarly attractive about these Saturday night meetings, perhaps a home touch that we all appreciate. Come out and see, next time, for yourselves.

CAMPUS NOTES

Pres. Davis visited Albany last week on business connected with the college. Sunday he spoke in Niagara Falls in the interest of the Anti-Saloon League.

Dean Worden '20, left for Syracuse on Wednesday where he will take his examination for appointment in the Aviation Corps of the U. S. Army.

The college girls who attended the Ag-Junior-Senior sleigh ride to Andover were as follows: Misses Leah Clark, Muriel Early, Ann Fisher, Pleasance Salan, Hazel Jackson, Marian Rooe, Elsie Swallow and Myrtle McPhilney.

Arthur Granger '15, was in town last week. He is awaiting his call to Uncle Sam's service.

Norman Whitney '17, has accepted a position in the English department of Penn State College, at State College, Pa.

Muriel Earley '20, spent the weekend at her home in Andover.

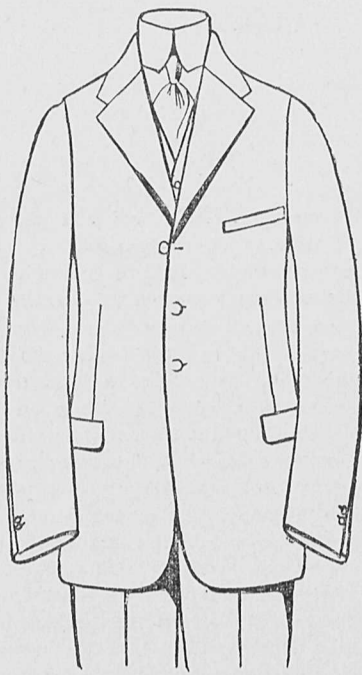
Ruth Bennett ex-'20, was a guest of Hazel Jackson, at the Brick last week.

COLLEGE WAR LEAGUE FORMED

The United States government has endorsed a plan originated at the University of Kansas, providing for a war league of American colleges. Dr. Templin, dean of the college of the University of Kansas, has been placed in charge of the work of organization; his plan is to "syndicate the ideas, ideals and strength of the academic America for the good of the nation." Lectures on timely war topics of both economic and military nature are a part of the scheme and five hundred and ten colleges have already been asked to join in the work.—Smith College.

SIGMA ALPHA GAMA

The Senior program for Sigma Alpha Gama will occur next Tuesday night, probably in the upper class parlors of the Brick. A part of the time will be devoted to parliamentary practice for which there has been some demand. The program will probably be a dramatization of Pippa Passes by Browning.



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1:15 P. M.	1:35 P. M.
6:45 P. M.	7:05 P. M.
Leave Hornell	Leave Almond
7:45 A. M.	7:15 A. M.
10:45 A. M.	11:00 A. M.
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Suits and Overcoats	\$15 to \$35
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MAJESTIC THEATRE, HORNELL, N. Y.

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Did Not Advance Its Prices Account of War Tax

Three Times Daily: 2:15, 7:15, and 9:00 o'clock

Prices: Matinee, 10c., 15c. Evening, 15c. 20c. 25c.

MAJESTIC THEATRE
HORNELL

THE SUBMARINE, A WONDER OF THE DEEP

Continued from page one

rudders situated fore and aft and controlled from within by suitable mechanism. Variations in the weight of the submarine itself due to consumption of food and fuel makes it necessary to have varying capacities for some tanks. There are fuel, food, torpedo and lubricating oil compensation tanks. The tanks are filled by pumps and emptied by forcing in compressed air from containing cylinders and thus displacing the water.

When a submarine is crushing on the surface her power does not need to be any different from that of any other sea-going boat. The Diesel engine, which takes crude oil for fuel, is universally used. When the vessel is submerged storage batteries to run electric motors as the source of power has become almost universal. But the batteries must be charged for every twenty hours of submergence when the boat is in motion. At the end of this time the boat must come to the surface to recharge batteries.

Inside the submarine are situated the steering gear which operates the rudder and the diving gear which operates the hydroplane; the front and rear planes have a separate control and are operated by two men in the central compartment. Each operator has a depth gauge. The statistical diving gear is an automatic contrivance by which water is slowly admitted to the central ballast tank (the boat already being in diving trim) until nothing but the two periscopes show. Any tendency to sink further is compensated for by a discharge of a small quantity of water and any to the tanks.

The air system consists of a number of seamless steel tanks containing air under pressure of 2500 pounds per square inch; so that the tanks are equivalent to a volume of air 110 times their capacity at ordinary pressure. In this way it is possible to carry fresh air for use in the boat and also an extra supply for emptying the various tanks. Each boat has a heating plant for cold weather and a refrigerator.

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Pharmacist
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Full line of Baked Goods and Confectionery
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Sutton's Studio

11 Seneca St., Hornell, N. Y.

ating system for hot weather. Other furnishings include a gyroscopic compass, sounding device, engine room fittings, telegraph, voice tubes, signal light, etc.

The external fittings consist of a suitable walking platform on top; this covers and protects a large amount of gearing, entrance and escape hatches, lifting eyes, engine exhaust pipes and the like. There is also the conning tower, which is used for navigating on the surface in rough weather.

Nearly all submarines carry small machine guns. There are also from two to six torpedo tubes for discharging the torpedoed. When ready to fire six or eight feet of the tail of the torpedo are pulled back into the boat and the firing and steering mechanism adjusted. The torpedo is then pushed back into the tube and the end of the tube covered with a water-tight joint. The torpedo is fired by compressed air, and a mechanism in the tube engages a lever on the torpedo releasing its engines so that the torpedo travels under its own power after once being started. Upon firing a torpedo a weight of about 1600 pounds is released, water however, immediately occupies the space where the torpedo was. A slight admission of water to one of the tanks compensates for the loss in weight by firing the torpedo.

The periscope consists of a long tube with a right angle turn on top and another at the eye of the observer. Two mirrors or reflecting prisms reflect the light twice. When the periscope is projected upward it extends 18 or 20 feet and may be telescoped down to four feet. One periscope is used by the steering officer and the other by the commanding officer. The periscope is ingeniously used to find the range of a ship that is being attacked.

The boat is divided into at least three separate and distinct parts or bulk-heads. Each one is connected to the next adjoining by an air lock. The control of the steering gear, air and water tanks is in triplicate and may be completely handled in any one of the three compartments.

Submergence is complete in less than four minutes. The crew of a submarine consists of twenty-four men; as only eight men are needed when cruising on the surface, this permits of three crews working in eight hour shifts.

The radius of action may be as large as six thousand miles, if the boat travels at the most efficient speed and part of the ballast tanks are filled with part of the ballast tanks are filled with fuel oil.

It has been thought by some that the aeroplane could easily locate a submarine when submerged, but the facts are that unless the sky conditions are very clear and the water very transparent a submarine submerged forty feet is absolutely invisible from three hundred feet above the surface.

If the German U-boats destroyed shipping at the maximum rate per week of last April it would take her four years to sink the remaining vessels that sailed that week and which represented less than one-half of the total vessels available for English trade alone or nearly ten years to sink them all. And in that time countless others could be built.

It has been said in print that Germany had last May seven hundred submarines and that by now would have twelve hundred. Seven or eight months are required to build a submarine. The author claims that taking into account Germany's equipment at the beginning of the war and allowing for all expansion due to war conditions, it seems very improbable that Germany had more than two hundred U-boats last May, and he believes that at a rate of one hundred submarines every six months would be a maximum estimate of their building powers for the future. This is a happy bit of engineering knowledge and lends hope to our cause.

EXCHANGE NEWS
In compliance with the order of Mortimer R. Miller, that all public, private and parochial schools in the city of Rochester be discontinued for a time, the University of Rochester has closed its doors indefinitely.

Final return of the Y. M. C. A. Friendship War Fund work at Thiel College amounted to a total of \$800.

At least four new "War Courses" are to be given at Lawrence College next semester. These courses have to do with instruction which will prepare men for military service, such as map reading, surveying and engineering, etc.

BRIGHT SHINES THE MOON TONIGHT

Love finds the useful realm,
Quick beats the heart,
Bright shines the moon tonight,
Youth does her part.
Bright shines the moon tonight
On peaceful lands;
Babe in the cradle rocks,
By happy hands.
Bright shines the moon tonight,
Midst clouds of war;
Fond hearts are torn apart
Seen never more
Bright shines the moon tonight,
O'er mother's home;
Dear ones are waiting there,
Waiting their own.
Bright shines the moon tonight,
Over the dead
Those who have gone and fought,
Suffered and bled.
Bright shines the moon tonight,
Long years have flown,
Sad thoughts are glad thoughts—
Cradles are homes.

—A. G. '18.

Rubber in India.
In southern India a factory at which high-grade rubber is made resembles a dairy, the milklike appearance of the latex adding to this illusion, as well as the precautions taken to insure absolute cleanliness, says the Family Herald. One of two methods of manufacture is generally adopted. If the estate is young and only a few trees are being tapped the rubber is made in the form of biscuits or sheets. The latex is put into shallow, round dishes or oblong pans and a certain quantity of acetic acid added to it. This is the coagulating agent most generally used. After standing for some hours the rubber is found floating on the top of the dish in a white, spongy clot. This is removed and washed and rolled by hand and through a mangle until clean. The biscuits are placed on racks in a warm room or an artificial dryer and allowed to remain there until dry. The finished biscuits are pale amber-colored and transparent, and for this reason are popular on the market, for their purity and freedom from dirt can be judged by holding them to the light and looking through them.

The Grant Monument.
The monument to General Grant in front of the capitol in Washington was contracted for on August 10, 1903. The contract provided that the work should be completed in five years, but the contractors asked, and were granted, several extensions. All of the architectural work is finished, the cavalry and the artillery groups are in position at either end of the platform, the lions and lamps called for by the design are in place and there remains to complete the memorial only the placing of the equestrian group, i. e., the figure of General Grant on horseback on the central pedestal, and affixing the two bas-reliefs which are to go on either side of the pedestal. The total cost authorized by congress for the memorial is \$240,000, exclusive of \$10,000 which was appropriated for use in procuring designs.

STUDENTS

We prepare pupils to teach Public School Music, give them a certificate and in most cases find them a position of Supervisor of Music. Our certificates are accepted by school boards and by the different states, without examination.
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RAY W. WINGATE
Director University Dep't. of Music

Patronize the Red Bus

THE RED BUS LINE solicits the patronage and support of the students and faculty of Alfred University.

BECAUSE
This line is owned by men who live in Alfred—men who patronize every student activity, Athletics, Fiat Lux, Kanakadea, etc., men who believe in boosting Alfred. We Believe in Reciprocity.

TIME TABLE

Leave Alfred P. O.	Leave Hornell Star Clothing House
8:30 A. M.	11:15 A. M.
1:30 P. M.	5:00 P. M.
7:00 P. M.	10:30 P. M.

Leave Almond North	Leave Almond South
8:50 A. M.	11:30 A. M.
1:50 P. M.	5:15 P. M.
7:20 P. M.	10:45 P. M.

THE RED BUS LINE

Special Winter Courses In Food Production

The State School of Agriculture at Alfred University will offer during the coming winter short practical courses in Food Production designed especially for those who are unable to attend the regular long term courses.

No tuition
No Entrance Examinations
Term begins January 3, 1918.
For full information address,
W. J. WRIGHT, Director, Alfred, N. Y.

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If you don't believe that good dressing pays put on one of your old shabby suits and go out and try to do business with strangers.
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