

THE STAR SPANGLED BANNER.

Oh! say can you see by the dawn's early light, What so proudly we hail'd at the twilight's last gleaming, Whose stripes and bright stars, thro' the perilous fight, O'er the ramparts we watch'd, were so gallantly streaming; And the rocket's red glare, the bombs bursting in air, Gave proof thro' the night that our flag was still there!

CHORUS. Oh, say, does that star spangled banner yet wave O'er the land of the free and the home of the brave? On the shore dimly seen thro' the mist of the deep, Where the foe's haughty host in dread silence reposes, What is that which the breeze, o'er the towering steep, As it fitfully blows, half conceals, half discloses? Now it catches the gleam on the morning's first beam, In full glory reflected, now shines in the stream:

CHORUS. 'Tis the star spangled banner oh, long may it wave O'er the land of the free and the home of the brave! And where is the band who so vauntingly swore, 'Mid the havoc of war and the battle's confusion, A home and a country they'd leave us no more? Their blood has wash'd out their foul footsteps' pollution; No refuge could save the hireling and slave From the terror of flight or the gloom of the grave.

CHORUS. And the star spangled banner in triumph shall wave O'er the land of the free and the home of the brave! Oh, thus be it ever when freemen shall stand Between their loved home and the war's desolation; Bless with vic'try and peace, may the heav'n rescued land, Praise the Power that hath made and preserved us a nation, Then conquer we must, when our cause is just, And this be our motto, 'In God is our trust.'

CHORUS. And the star spangled banner in triumph shall wave O'er the land of the free and the home of the brave! What Chemists Can Do in War. The announcement that George A. Burrell, chairman of the Pittsburgh section of the American Chemical Society, formerly connected with the Bureau of Mines, had returned to the nation's technical forces against poison gases raises an interesting question as to just what services chemists render in war time. This question is best answered by referring to the experience of chemists abroad during the war. In a late number of the Journal of Industrial and Engineering Chemistry, Richard B. Pilcher tells of the work done by English chemists in war time. Mr. Pilcher wrote, in part: "The laboratories of our universities and colleges have become small factories for the preparation of drugs and medicaments, and many institutions have been trusted with the examination of materials in the manufacture of explosives. The measures taken in this emergency secured uniformly in method and the standardization of processes which would otherwise have been difficult to attain. Under the supervision of their professors, students unit for service with the colors have been helping the country, and at the same time gaining useful experience. Several hundred chemists have been engaged for assistance in the laboratories and in the works of Government controlled establishments supplying armaments, munitions and other materials of war. Many of these have found an opportunity of helping the country through the registers maintained by the Institute of Chemistry and other societies for this purpose. In cases where the number of men having technical experience in some branches was limited, the authorities have made arrangements for preliminary training, so that their services should be available when required in new factories."

"In consequence of methods of offense initiated by the enemy, such as the employment of poisonous gases, there arose a further demand for men with training in chemistry for service in the field. For the duties involved the authorities deemed it expedient to enlist men with training rather than entrust them to men without any scientific knowledge, and the unit thus formed is a fighting force. With the assistance of the universities and technical colleges and the various bodies interested in chemistry, an entirely new force was brought into existence. The officers were mainly selected from chemists who already held commissions, while sergeants and corporals with knowledge of chemistry were transferred from other units. That they did their work well is shown by the dispatches of Lord French and Sir Douglas Haig. "From the experience gained in the campaign it is clearly advisable that the State should have control of such an organization of professional chemists as to ensure at any time their efficient service in the many requirements of the naval, military and air forces. In addition to competent chemical advisers of undoubted standing, the following appear to be essential: Chemists to control the manufacture of munitions, explosives, metals, leather, rubber, oils, gases, food, drugs; chemists for the analysis of all such materials and for research; chemists on active service, to assist

in the control of water supplies, in the detection of poison in streams, in the analysis of water and food, in the disposal of sewage, and in other hygienic matters; chemists, both at home and in active service, to assist in devising safeguards against enemy contrivances of a scientific nature, and methods of offense to meet the same, as well as for the instruction of troops in such matters. "It has been called a 'chemists' war' and an 'engineer's war.' Many regard it largely as a conflict between the men of science of the countries engaged. Our chemists have not been dismayed at that, but it is impossible to foresee to what limits beyond the accepted tenets the enemy is prepared to go in the application of science to warfare, and we cannot reproach ourselves with having set an example of frightfulness. "To sum the matter up, chemists have met the situation with a spirit of true patriotism and have been promptly organized for the service required of them. It is not too much to hope that, as the discoveries of science have been applied to the destruction of humanity, they may be devoted more and more to the furtherance of the arts of peace, to the uplifting of civilization, and the pacification of the world."

State Forests for Grazing Purposes. Commissioner of Forestry Robert S. Conklin, issued instructions to the foresters and rangers of the Pennsylvania Forest Service covering the use of the state forests for grazing during the period of food shortage. According to the fact that almost 25,000,000 trees have been planted on the state forests at considerable cost, permission for general grazing cannot be granted, and each application must be treated separately. However, sufficient area remains in the million acre preserve to provide grazing grounds for thousands of cattle, and if farmers take advantage of the Department's offer, Pennsylvania's meat production can be materially increased within the next two years.

Following is the Commissioner's letter of instruction to the foresters: Applicants for grazing privileges on the state forests are requested to make careful note of its provisions before making application, in order to avoid unnecessary correspondence and to lessen office work. "A rule of the Department has heretofore prohibited grazing within the state forests except in the case of milk cows. However, by reason of the crisis through which we are now passing, it is expedient and in accord with Governor Brumbaugh's desire that certain of the State lands be thrown open to grazing. "You are therefore instructed that if applications be made to you for the grazing of cattle, you may select and set aside such areas where grazing for a limited period may be permitted without serious detriment to the forest. This would be in places where there are no plantations, where good young growth is well out of reach of the animals, and where their trampling will do no serious harm. In the case of scrub oak, brush barrens, and bracken-covered grounds, it is probable that grazing for a short period would do no damage whatever. There are other localities where grazing probably could be permitted only after the area has been fenced, or where the grazer will supply herders to keep the cattle within definite areas.

"Under the above conditions and on the lands so described the Department will permit grazing. Applications for this privilege may be made to you and referred to the Department. Applications forwarded to the Department should be accompanied by a description of the land to be grazed, and a report whether in the judgment of the forester grazing may reasonably be permitted. Both in the case of grazing and the cultivation of the soil, no charge is to be made for the privilege. The land is free to the first taker. The privilege of grazing or cultivating will be construed to be open until it shall have been modified by further notice from this office. "Foresters are instructed to render all assistance in their power to persons who wish to cultivate land or graze cattle. If it be decided that formal contract is necessary, the form of contract will be prepared at this office. It is probable that nothing more than a verbal letting may be necessary. In no case, however, will the grazer or cultivator be able to obtain any permanent interest in the land, and the privilege must be surrendered whenever the Department decides that it no longer may be exercised."

(Signed) ROBERT S. CONKLIN, Commissioner of Forestry.

Women to Work on Land. London, England.—Women are now being recruited for the land, under the terms and conditions which were set forth by Mr. Prothero at the great meeting recently held at the Royal Albert Hall. The terms include board and lodging during training. One free outfit (high boots, breeches, two overalls and hat.) Wages 18s. per week, at least (or the wage rate of the district, whichever is higher.) Over 1000 training centers have now been organized throughout the country. In some cases the women will be housed in large private houses, which have been lent, or grouped in hostels, and trained on surrounding farms. In some cases houses have been lent by farmers, who are undertaking training under the schemes. The welfare and supervision of the girls both during training and after, when they are actually working on the land, will be controlled by experienced women, carefully selected by the local Women's War Agricultural committees and National Service. Thousands of strong women are required at once to do men's work, and all who realize the national importance of working to increase the food supply should apply for terms and conditions to the nearest postoffice, employment exchange, or National Service office, where enrollment forms may be obtained. "They are all good enough, but the 'Watchman' is always the best."

RUSHING WORK ON BIG FLYING FLEET

To Turn Out 3,500 Machines This Year.

COFFIN HEADS THE BOARD

Plans to Send a Constant Stream of Trained Aviators to Aid Our Allies. Six Engineering Schools Have Added Aviation to Their Courses of Instruction.

The Council of National Defense has announced the creation of an aircraft production board, to be headed by Howard E. Coffin. This step, according to Mr. Coffin, marks the completion of plans to turn out in American factories about 3,500 air machines this year and double the output next year. They will include both training and battle types. The establishment of schools and training fields is also planned, with sufficient capacity not only to man these machines, but to supply a constant stream of aviators and mechanics to the American forces in Europe. This means the education of 6,000 aviators this year. Under the auspices of six of the nation's leading engineering schools cadets are already under preliminary training for the American military air service, and negotiations for three of the nine training fields now contemplated have been approved by the war department. Their preparation will begin immediately.

Won't Purchase Abroad. Negotiations on contracts for aeroplanes are under way, and some necessary orders have already been placed. The United States will not buy aircraft abroad. The aircraft production board will act in the closest co-operation with the war and navy departments, especially with the recently created joint army and navy board on design and specifications.

To Urge Co-operation. The general function of the aircraft production board, according to Mr. Coffin, will be to bring manufacturers together and help make their resources available to the government and assist in stimulating the production of better types and greater quantities of air machines.

"We have been in constant touch for weeks with the aircraft manufacturers on the problem of quality production of machines," Mr. Coffin said, "and the government authorities are already signing contracts for as many machines as our present appropriation permits. The United States can depend on a minimum of 3,500 aircraft of all types the first year if congress authorizes us to proceed. The program we now have in mind would provide for both training and combat machines.

Engine Chief Problem. "Only a few American manufacturers are in a position to handle large contracts, but European orders for training machines within the last two years have helped in some measure to overcome a tremendous disadvantage existing at the beginning of the war. In building battle planes the engine is the chief problem. American manufacturers are now conducting successful experiments with both new and foreign types, and we are confident that we shall be able to develop within the year the manufacture of motors of sufficient power and endurance for use at the front.

"Arrangements have been made with British and Canadian officers to standardize the training machine in use in Great Britain, Canada and the United States, so that machines can be distributed impartially and without difficulty among the three nations.

Observers Visit Canada. "The country has made progress in developing aviators. Last month a group of army officers visited the training camp of the royal flying corps at Borden, Ont., one of the four camps established in Canada, and the aviation school at Toronto, where cadets are trained under military discipline for the service. In these schools there has been incorporated the latest European experience in the development of this new art of the air.

"Our officers were deeply impressed with their observations, and as a result we called together here the heads of six prominent engineering schools, which also have military training, and made plans to establish a similar system in the United States. The six institutions are the Universities of California, Texas, Illinois and Ohio, Massachusetts Institute of Technology and Cornell University. Three technical instructors from each of these places were sent to Toronto. They returned on May 8, after a comprehensive study of the course given there, prepared to teach it themselves. On May 10 these six engineering schools opened similar cadet aviation schools at their respective institutions."

Got a Puncture and Lost. A Roselle (N. J.) father told two sons the one who got to recruiting station three miles away first could enlist. They raced on bicycles until one got a puncture and lost.

Another Spring Drive. War on mustaches begun by Hoboken health department, and city employees are asked to set a good example by sacrificing theirs first.

SPORTS TO HARDEN MEN FOR WARFARE IN TRENCHES

Baseball Leagues, With "World's Series" Will Be a Feature of Camp Diversions.

A practical method of national service whereby famous football and baseball players, physical instructors and athletes generally can aid the government with their special skill and knowledge has been provided through the committee on training camp activities, recently appointed by Secretary Baker, with Raymond B. Fosdick as chairman. After study of Canadian and British army training systems Mr. Fosdick has found that all athletic sports and even children's games have a distinct place in military work and give the soldier the iron muscles he needs in the hand to hand fighting of trench warfare.

Baseball will be the feature of the efforts of the committee. Extensive organization of divisional leagues and championship competitions that probably will include a world's series will be encouraged by the committee and supported by officers in command of the camps. Similar organization for other sports will be perfected, but American national armies are expected to give their greatest allegiance to the American national pastime.

Men of national reputation as ball players or athletic trainers will be assigned to each camp to instruct and aid the soldier players.

Another feature of the recreational programs will be bayonet competitions. There is a grim purpose back of this. The fields in France have seen the greatest use ever made of cold steel, and it is vital that the American soldiers be at least the equals in skill and strength of their German opponents when they meet. The committee hopes to develop personal interest among the men in proficiency in bayonet exercises through employing it as a sport befitting soldiers.

Singing also will be encouraged among the troops. Already theatrical concerns are volunteering their aid in providing amusement for the men. Motion picture films also will be employed. The troops will be kept in touch in this way with the work of other camps and with conditions among American or other forces at the fighting front.

FLAG ON OUR AEROPLANES.

Secretary Daniels Adopts Emblem Like One Now in Use in France.

Secretary of the Navy Daniels has issued a general order prescribing the official insignia to be shown henceforth on all aeroplanes, dirigibles and balloons of the United States navy. It is understood Secretary of War Baker soon will issue a similar order prescribing the same insignia for army aircraft. The emblem, to be displayed on each wing of an airplane—on the upper surface of the upper wing and the lower surface of the lower wing of biplanes and triplanes—consists of a five pointed white star inside a blue circular field, with a red circle in the center of the star.

A similar emblem was adopted a month ago by the aviators of the American escadrille, serving as volunteers with the French army, their emblem, however, being a blue star in a white field, with a red circle around it. The tails of American aeroplanes are to be painted in three broad vertical bands, red, white and blue, reading from aft forward.

ALL UNDER SIXTY MUST WORK

West Virginia Will Tolerate No Loafers, However Wealthy.

Every ablebodied citizen of West Virginia between the ages of sixteen and sixty must work at least thirty-six hours a week under a law passed by both houses of the legislature. The measure includes persons having incomes and no specified employment. It is to become operative in thirty days. The penalty for violation is forced employment by counties or municipalities. The bill was urged by Governor Cornwell as a war measure.

SAVE BOTTLES AND CANS.

Old Receipts Suitable for Putting Up Winter Food.

Housewives are urged to save bottles, especially wide necked ones, to be used for preserving, in a bulletin issued by the United States department of agriculture. The department points out that there threatens to be a serious shortage of regular jars and preserving cans next fall. Fruits and jams when sealed with corks or paraffin can be kept perfectly in bottles. Fruit juices may also be packed in small necked bottles.

Specialists of the department are urging canning clubs and housewives not only to can products, but to dry fruits as well. Nothing, they advise, should be canned that can be preserved otherwise. The bulletin says:

"Candy containers or other glass jars with screw tops or glass stoppers and, in fact, any receptacle of glass, crockery or porcelain can be sealed with cork or paper and paraffin.

"Large tin canisters or tin cans with removable covers, provided the body of the container is air and water tight, will be found useful in canning certain food products. Such containers can be sterilized and their covers hermetically sealed in place with solder or wax."

—Subscribe for the "Watchman".

Oddities In the News

Indiana man has pensioned geese that retired after twenty-one years of usefulness.

Chinese regiment, using sticks for guns, drills regularly at Columbus, N. M., and is eager to fight Germany.

Butch, a fox terrier, grabbed hand of pickpocket before he could get it out of pocket of dog's owner at San Antonio.

After a few days' rest a Jersey policeman who tried to break up a United States soldiers' recruiting meeting will be able to return to work.

Didn't know he had a wooden leg, although she had sat on fiance's knee for three years, Pittsburgh girl testified in breach of promise suit.

Overalls for housework have been adopted by women of Racine, Wis.

Shaving may be prohibited in Paris because of a shortage of soap.

Weighing machine, once instrument of amusement, has become a daily necessity in Germany because people lose so much weight under war rations.

Sugar so scarce in Paris the ladies are carrying it in new fad jeweled boxes holding two lumps.

Indiana woman found in potato note from farmer saying he had sold at 69 cents a bushel and asking purchaser to write him how much was paid. She had given \$4 a bushel.

USE MORE CORN AND LESS WHEAT AND SAVE MONEY

Department of Agriculture Says Everybody Should Adopt Wheatless Days.

"Begin today to eat more cornmeal and hominy grits in place of wheat flour and wheat breakfast foods," is the message the United States department of agriculture is sending out broadcast to housewives. "Try a wheatless breakfast tomorrow and then extend the wheatless idea to other days or meals," the dietary specialists suggest.

Corn, a great natural breadstuff of this country, the department's specialists point out, has not been used for human food nearly as much as its valuable nutritive qualities warrant. This is due largely to the fact that many persons with a wheat using habit never have taken the pains to learn to use corn. There is no important dietetic difference between corn and wheat as sources of body fuel.

To those who wish to try wheatless meals the department suggests the following for a wheatless breakfast or dinner:

As a substitute for wheat breakfast foods try white or yellow cornmeal or hominy grits, served with cream and sugar, butter, sirup or fresh or dried fruit.

As a substitute for wheat biscuits, rolls or toast the housewife can employ a dozen different forms of corn bread, such as hoe cake, dodgers, soft or spoon corn bread, hominy bread, cornmeal and rye Boston brown bread, Zuni Indian bread, etc.

Fried cornmeal mush, fried hominy or cornmeal pancakes made with very little wheat flour will be found a pleasing variation from wheat cakes.

Cornmeal codfish cakes, cornmeal scrapple, cornmeal croquette, cornmeal or hominy cooked with meat, figs, cheese, eggs or milk, will supply nourishing dishes for the hearty courneys.

Hominy grits and coarse hominy (sometimes called samp) may be boiled and used like macaroni or other wheat pastes to serve as side dishes with meat.

For dessert Indian pudding, cornmeal and fig or apple pudding, apple dumplings, cornmeal doughnuts, gingerbread, cake, fruit gems, etc., will contribute variety as well as nourishment to the bill of fare.

The housewife who wishes to substitute corn for some but not all of the wheat flour can make excellent raised or light bread pancakes, waffles, muffins, rolls, Graham flour, Indian bread, etc.

Wheat, rice, rye, barley, oats, corn and potatoes are largely interchangeable as sources of starch in the diet.

NEW SERVICE UNIFORMS.

Army Will Get a New Style if Plans Do Not Go Astray.

Uncle Sam's army officers may wear a new service uniform if a style now being considered by the war department is approved. The uniform is the one to be worn by the officers who will accompany the Root commission to Russia.

SOME FACTS ABOUT THE LIBERTY LOAN

Faith, Honor and Total Resources of Nation Back Them.

BONDS ARE NONTAXABLE

There Are Two Kinds, One Payable to the Bearer and the Registered Bonds. It Is a Patriotic Service That Every One Should Render to the Nation, Government Officials Say.

A liberty loan bond is a solemn promise of the United States to pay at maturity the amount of the bond to the holder thereof and to pay interest semi-annually each year from the date of the issuance of the bond until it is fully and finally paid.

The faith and honor of the United States, backed by all of the resources of the nation and the American people, are the security. A liberty loan bond is a mortgage on all the resources and taxing powers of the government and all of the resources of the American people.

There are two kinds of liberty loan bonds. Bearer bonds are to be issued in denominations of \$50, \$100, \$500 and \$1,000. These bearer bonds, which are made payable to bearer, have interest coupons attached, which are detached by the holder when the interest installments they represent are due and can be cashed at any bank the same as a United States treasury note.

Registered bonds are to be issued, which are registered as to both principal and interest, in denominations of \$100, \$500, \$1,000, \$5,000, \$10,000, \$50,000 and \$100,000. Checks for the amount of interest due will be mailed out semi-annually to the holders of these registered bonds.

Terms of a Liberty Loan Bond. Liberty loan bonds of the first issue of \$2,000,000,000 are to bear date of June 15, 1917, and to run for thirty years, except that the government reserves the right to pay them fifteen years after date. If this right is not exercised by the government fifteen years from date the bonds will run the full thirty years.

These bonds bear interest at 3 1/2 per cent per annum, and the interest is payable semi-annually, on the 15th day of December and the 15th day of June in each year. One especial advantage no other bonds, national, state, municipal or corporate, have is that if the United States during the continuance of this war shall issue other bonds at a higher rate of interest the holders of these bonds have the right to exchange their liberty bonds for bonds bearing the higher rate of interest, dollar for dollar.

They are nontaxable. If your city, county and state taxes are 3 mills on the dollar, a not unusual tax, these bonds are equivalent to ordinary corporate bonds or other investments bearing 6 1/2 per cent.

In addition, no federal tax which war conditions may later make necessary will affect these bonds. The only tax these bonds are subject to is the inheritance tax, which applies to all property of all kinds whatsoever.

How Are Liberty Bonds Obtained? Blank forms of application for the purchase of these bonds can be obtained from the treasury department, any Federal Reserve bank, any national, state or private bank, any express office and any postoffice in the United States. Any bank or postmaster will aid applicant in filling out his blank and the other acts necessary to obtain these bonds.

It is not necessary to advertise these bonds to sell the whole issue, but it is earnestly desired that this loan shall be a popular loan, a loan by and from the people at large of the United States and not alone from banks, trust companies and financiers. To that end bonds are to be issued of small denominations, and subscribers for small amounts are to be supplied before the subscribers for large amounts are granted their full subscription.

Every American who subscribes to the justice of the course of the United States in entering and conducting the war we are now engaged in should subscribe to the liberty loan bond issue to the extent of his or her financial ability.

Every American who subscribes to the belief that an American should stand by his or her country should subscribe to the liberty loan bond issue. Every American who loves America and is jealous of America's honor should subscribe to the liberty loan bond issue. The real success of the loan is to be more determined by the number of Americans participating in it than by the amount subscribed. The spirit of the nation is going to be judged abroad, especially by our enemies, more by the number of its American men and women who support this bond issue than by the mere amount of money subscribed.

The \$5,000,000,000 bond issue of this year is named "the liberty loan of 1917" because it is to be a loan from a free people to be used in freeing the world.

It is the loan of a liberty loving people to be devoted to the establishment of liberty in Europe and on the high seas.

It is the loan of the great democracy of the new world to redress the wrongs and support the cause of the democracy of the old.