

NEED SEXTANTS FOR NAVIGATORS

United States Swept Bare of Instruments Used to Guide Ships.

OLD CAPTAINS TO RESCUE

Out of Closets and Attics Are Dug Sextants That Have Not Been Used for Years—Navigators' Aid Columbus Did Not Have.

Washington.—One of the early effects of the war was an acute shortage of the instrument most used in navigating ships at sea, the sextant.

In a few weeks after the United States became a party to the great struggle, the market was swept bare of what might be termed the floating supply of these important instruments.

Since then, importations from England, Canada and France have eased the American market somewhat, but there is still a sufficient shortage to hold the price far above what it formerly was.

In the early months of this country's participation in the war, when the United States shipping board was establishing the chain of navigation schools at which it is training officers for the new merchant marine, there was such a scarcity of these necessary instruments—which are used daily in the schools to teach methods of determining a ship's position at sea—that an appeal was made for the loan of instruments.

The result was striking. Out of the closets and attics of former captain's homes, particularly in New England, sextants appeared that had not seen the light, in some cases, since the days of the clipper-ship era, when the United States was supreme on the sea.

Many of these instruments had been on long voyages to the mysterious East; others had been in the whale fishery to the far North; a few had been carried among the Cannibal Islands of the South Pacific, others among the pirates of the China seas.

It had not been thought, when these instruments were stowed away by careful hands, years ago, that they would ever again serve the merchant marine. Today many of them are being used by young men who will qualify as officers on the new and greater merchant marine, while others, which have been presented to the shipping board, are actually making voyages again, this time among the pirates of the submarine zone.

A sextant, unlike a watch or any instrument with constantly moving parts, is very slow to wear out. There is not much difference in the sextant of today and the original sextants produced in England when the instrument was first perfected by John Hadley, back in 1731.

Hadley called his instrument at first an octant, because it represented in its scale of degrees but an eighth part of the circle, that is, 45 degrees. Later instruments were termed quadrants, as they represented a quarter of a circle, 90 degrees. The sextant, or sixth of a circle, 60 degrees, was found to be most practical, and in time came into general use. The practical distinction between these three instruments is slight, however.

The first sextant was not an invention, as might be supposed, but an adaptation of ancient instruments used by astronomers from time immemorial to determine the sun's elevation, or latitude. The oldest of these ancient instruments was the astrolabe, a disk of copper or brass, cut to the full circle of 360 degrees. This was fitted with a plumb line, and on its face a bar pivoted on the center, and having at one end a pin. One man held up the disk by the line, another sighted the sun over the pin in the end of the bar, and another noted where the shadow cast by the pin fell on the scale of degrees marked on the disk.

It thus took three men to make an observation, which was usually faulty, while the use of such an instrument on a moving ship was almost an impossibility.

Another ancient observing instrument was the cross-staff. This consisted of a bar of wood—some of them were seven feet long—fitted with a sliding upright bar, or cross. The long bar was held toward the sun, and the observer was posted at one end. The shorter bar was then moved back or forth until the observer saw the sun over its upper tip and the horizon at the same time under its lower tip. The angle thus determined was marked on a scale on the long bar.

A grave objection to this instrument was that the observer was obliged to look at the sun and the horizon at the same time.

Columbus used both instruments on his voyage to the new world, but apparently neither helped him much in determining the position of his ships, which he could only guess at until he made a landfall in the West Indies.

Hadley Invents Instrument.

John Hadley conceived the idea of employing the principle of the cross-staff in an instrument that would enable the observer to see both the sun and the horizon when looking at the latter. This he accomplished by arranging a series of mirrors in such a way that the observer by the movement of an arm, or lever, attached to

an arc brought the sun down to touch the horizon.

When the observer using the sextant gets the sun down to the horizon, he fixes the arm on the scale by means of a screw, and proceeds to read the scale, which gives him the sun's altitude in degrees.

When Hadley brought his sextant out in 1731, it was given a trial by the British authorities, on the yacht Chatham, off Spithead, on a gusty day in August. We read that the weather "was too rough for a satisfactory test." Rough weather is a frequent cause for trouble in handling the sextant, as it is difficult to "catch" the sun and bring it down when on

the uncertain platform of a moving deck.

The value of Hadley's instrument was not at once recognized by mariners, but its worth has been amply demonstrated by the fact that no essential change has been made in it since it first appeared, nearly two centuries ago.

With the sextant perfected, the apparatus used by a navigator was greatly reduced in bulk. Some of the ancient ships, bound on long voyages, took along a great variety of appliances that today would be valuable only as junk or curios.

Now the American officer, ready to ship for service overseas, takes his sextant, the most important of all navigating instruments next to the compass, in a neat mahogany case only nine inches square by five inches deep, and needs nothing further, except the ship's chronometer, to enable him to tell where he is every day on his voyage across the vasty deep.

SEA TO MAKE UP SHORTAGE IN FATS

Even Oleomargarine Is Now Being Manufactured in Norway From Fish Oil.

TROPICS TO BE DEVELOPED

Subjugation of the Sea Not the Only Important Step Being Contemplated Toward More Effective Utilization of Nature.

London.—The world's supply of oils and fats is going to be derived in rapidly increasing measure hereafter from the seas. This is the conclusion to which investigators of this problem, which was one of the first to become acute after the war started, have brought themselves.

The problem indeed was beginning to be a real one before the war started. The production of live stock for a long time had not been keeping pace with the world's requirements. This has been in considerable part because of the increasing number of peoples that are requiring more and more meat in their diet, and partly from other causes.

The net result is that in the search for new oils and fats, and indeed for new uses of fish as a substitute for meat, important progress has been made. Some recent developments suggest that the seas are altogether likely in coming generations to take the place of the great ranges of the Americas and Australia for the production of some important food articles.

Butter Substitute From Fish.

The announcement recently from Norway that a satisfactory substitute for oleomargarine had been produced from fish oils, while it was regarded as extremely important, is in fact only one evidence of this increasing dependency of the world upon the seas' sources of supply for various necessities. Now it is asserted that the depths of the deep waters are presently going to be put under contribution for a variety of new foods and substitutes for leather in many uses.

The subjugation of the sea is not the only great step that men are contemplating toward a more effective utilization of nature's bounty. The tropics are going to be developed, after this war, at a rate never before imagined, unless all signs fail. Not only are the governments preparing to give more systematic and scientific encouragement to proper colonial development in the tropical areas but the colonizing spirit has been receiving a great revival. One hears soldiers from every army, Englishmen, Scotchmen, Frenchmen, Italians and, it is said, German prisoners, talking of the possibilities of South America, Africa, the Pacific Islands, in fact, the whole great undeveloped empires of the world.

Price Will Be Higher.

In Norway milk and butter supplies are very short, but the Morgenblatt announces that the problem of a substitute for oleomargarine has been solved and that the Norwegian oleomargarine could be made of purely

Norwegian materials without the admixture of foreign vegetable oils, which experts had declared to be essential.

The discovery is due to the researches of a committee appointed by Hr. Vik, the minister of supply. For the present the Vera fat refinery will manufacture the article, and it is asserted that the factory will be able to meet the requirements of the whole country.

The secret is the use of different kinds of fish oil, of which there is plenty on hand, both of whale and other fish. The price will be slightly higher than the former oleomargarine, because there is a duty on fish oils higher than that on the vegetable oils previously used.

A representative of the Morgenblatt has been given the opportunity of tasting the new product and asserts that in flavor and appearance it is equal to the best oleomargarine. It is expected to be on the market as soon as a supply can be manufactured.

MISS EMMA FROHMAN

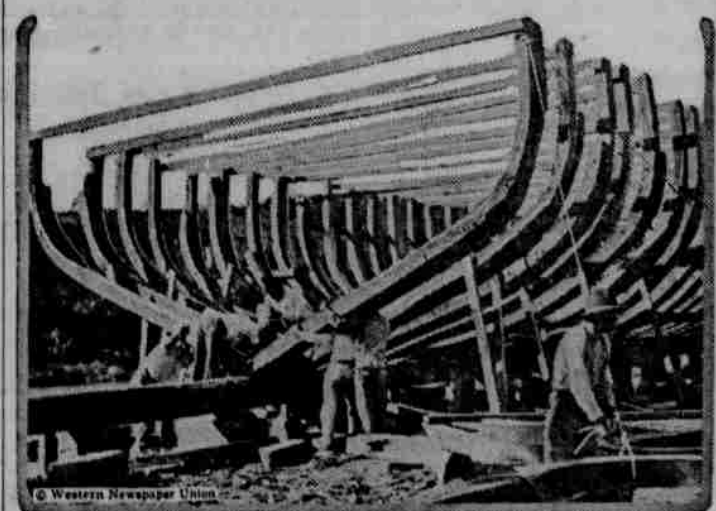


Miss Emma Frohman, sister of Daniel Frohman, the famous theatrical manager who went down with the Lusitania, is sponsoring the work of making woolen undergarments for soldiers. Through her efforts, a special undergarment has been designed here after a French model, and is being turned out in quantity at the workrooms of the Vacation War Relief in New York city.

Whisky Prices Soar in England.

London.—Three years ago a bottle of whisky containing about twenty-eight ounces could be purchased for 84 cents, but as the government prohibited the distilling of whisky and the vending of spirits under three years of age, the price has since that time been steadily rising. Where supplies are still available the price has ranged between \$2.00 and \$5.

CUBAN SHIPBUILDERS AID IN WAR WORK



The shipyards of Cuba have been scenes of much activity since Cuba entered the war. The construction of wooden ships, so as to release steel ships for war requirements, is going on without delay. The photograph shows one of the wooden ships under construction.

WORLD HAPPENINGS OF CURRENT WEEK

Brief Resume Most Important Daily News Items.

COMPILED FOR YOU

Events of Noted People, Governments and Pacific Northwest and Other Things Worth Knowing.

Many persons have been injured and more than 100 houses collapsed by earthquake shocks at Amoy, China, Wednesday.

The Prussian budget for 1918 calls for 2,250,000 marks to be devoted to German propaganda in Polish territory, according to an official dispatch Wednesday from Switzerland.

Women who can qualify will be employed as ship draftsmen in the Navy department and in the navy-yard service throughout the country, the Civil Service commission announces.

The first woman and child in the Eastern states to be interned as enemy aliens were placed in a detention camp at Gloucester, N. Y. They are Mrs. Matilda Hansen and her 12-year-old daughter.

Private J. W. Boucher, of the 257th Canadian Railway Battalion, has been sent home from France because he is "too old to fight." He is 73 and fought in the American Civil War with the 23d Michigan Volunteers.

Twenty-five thousand Filipinos are under arms and drilling in the hope of being called into the United States Army for service in France, according to C. W. O'Brien, an attorney, who has just returned to San Francisco from Manila.

President Wilson's intervention has terminated the Eastern shipyard strikes. Reports Monday night to the Shipping Board from union heads in all districts in which carpenters are out said the strikers would be back at work by noon Tuesday.

With the Yolande, Castle and Searles mines idle, strikes of coal miners in the Birmingham district of Alabama had spread to three new companies, with approximately 15,000 miners idle. The miners claim the Garfield proposals are not being lived up to.

Count Emerich Karolyi, according to a dispatch from Budapest to the Amsterdam Frankfurter Zeitung, has submitted to the Hungarian military authorities a charge of alleged high treason against his cousin, Count Michael Karolyi, president of the Hungarian Independence party.

At a private conference of leaders of the Farmers' Nonpartisan League in Sioux Falls, S. D., Tuesday, attended by A. C. Townley, National president of the organization, it was decided not to enter the South Dakota primary race next May, according to reliable information.

Arthur Soule, a wealthy rancher of Sanders county, Mont., who is awaiting trial at Thompson Falls for the murder of Ben Soule, his neighbor and nephew, last month, is charged with the murder of his own baby daughter 21 years ago. The information was filed by the county attorney.

Discharge of E. Dana Durand, former director of the census, from his position in the economics department of the University of Minnesota was demanded at a meeting of the regents of that institution Wednesday by a delegation of representatives of organized labor and the Nonpartisan League, a farmers' political organization.

The necessity for increased wages for railroad employes was conceded Wednesday by representatives of a majority of the railroads of the United States, appearing for the first time before the government's railroad wage commission. They said they came, not to oppose requests of the employes, but merely to aid the commission by giving information.

A big raid was carried out Wednesday by the French southwest of Butte Mesnil. The German positions were entered up to the third line and many defenses and shelters were destroyed.

Sir William Goode, who, since the entry of the United States into the war has occupied the important post of liaison officer between the British food ministry and the United States food administration, discussed the present food situation in an address Thursday to the London Rotary club.

Enthusiastic applause and cheers for America met the declaration of the Italian Premier Orlando, at the opening of the parliament Wednesday, that the war situation was growing better, due to help from the United States replacing Russia.

The Stockholm Aftonbladet says that after a massacre which occurred at Kervo (Kerava) the Red Guards wired to Helsingfors for surgeons and ambulances. Five surgeons who left immediately, adds the paper, were murdered by the Red Guards on their arrival.

STATE NEWS IN BRIEF.

Walter Brobeck was arrested Saturday at Medford, for failure to support his four children, ranging from 2 to 11 years old. On failure to supply \$500 bail he was given a room in the county jail.

The Corvallis fire department was presented with a service flag Wednesday. The flag contains 27 stars, one of them being of gold to represent the death of George Watts, of Company K, who died of pneumonia in France.

The county court at Pendleton will be required, under three suits filed against the Spokane Flouring Mills company, to determine the damages suffered by three Umatilla county farmers whose grain last year did not come up to expectations.

Edward D. Pierce, the 15-year-old son of Mr. and Mrs. Alfred D. Pierce, of Blind Slough, near Astoria, fell off a logging train on Larkin-Green road Tuesday evening and was run over and so badly crushed that he died before medical attention reached him.

The Humburg Manufacturing company, of Mount Angel, has shipped a car of 65,000 tent stakes which they made for the government. They are still working on an order of 120,000 to be delivered later. Up to this time they have shipped 475,000 stakes.

Insurance Commissioner Harvey Wells has advised the Ford Car Owners' Protective association, of Chicago, which is transacting business in Portland and other points of the state, to either comply with the insurance laws of Oregon or cease doing business.

Seven hundred Lane county farmers had returned agricultural survey blanks, in connection with the plan of the Federal government to obtain knowledge of food resources, Saturday night, according to a statement made by County Agricultural Agent N. S. Robb.

Out of 17 men examined last week by the Umatilla Medical Advisory board, only five were passed for service. The county examiners, on the other hand, have had a much better record, for, out of 20 examined Wednesday, only one was referred to the advisory board.

O. O. Calderhead, of the Washington Public Service commission, has been designated by the Oregon commission to represent it at a hearing to be held in Chicago within a few days by an Interstate Commerce commission examiner to reopen the question of rates on glass bottles from the east to the Pacific Coast.

In the foreclosure of delinquent tax certificates issued to counties, service can be obtained on delinquent taxpayers by publication alone, Attorney General Brown held Wednesday in an opinion to District Attorney Biggs, of Harney county. But the attorney general emphasizes the point that this opinion applies only to cases in which the counties themselves are bringing the foreclosure suits.

A drive has been started throughout the state to secure information about farm crops and farm labor conditions, according by Labor Commissioner Hoff. Follow-up letters have been sent to all of the granges, farmers' unions and others interested throughout the state, to get this information in shape and forward it at the earliest possible moment so that it will be ready for compilation within the next two weeks if possible. The labor commissioner hopes by this census to have a complete and accurate estimate of all crops in the state upon which to base an estimate of the amount of farm labor needed to handle the crops for the 1918 season.

Information which has been received in Salem is to the effect that the great Horst Brothers' hop ranch near Independence, said to be one of the largest in the world, will be converted largely into a vegetable ranch and that the dryers will be used for evaporation of vegetables. It is stated that 400 acres of the ranch are to be leased for vegetable growing.

W. S. Brown, Oregon Agricultural college extension specialist, will open a pruning school in Dallas next Wednesday morning. This school is to illustrate the pruning of the Italian prune tree in the formative period in the young orchard and also the pruning for fruit in a bearing orchard. Rejuvenating of old orchards also will be given some attention.

Fire which apparently started from an overheated forge Thursday night damaged tools and machinery in the welding and machine shop belonging to H. R. Riley, of Bend. The building was saved.

Miss Eunice Ramsdell shipped on Monday's outgoing train the last two of the four boxes of ready-to-wear clothing contributed by citizens of Cove and vicinity for immediate relief of destitute Belgium children and women.

The Beaver Cement company, of Gold Hill, has announced that it is ready to make delivery of four carloads of lime to farmers in Corvallis. The price is \$4.55 per ton in bulk and \$7.55 in sacks, with a rebate of 1 1/2 cents for return of sacks.

Miss Evelyn Hanks, of Perdue, a small settlement in Douglas county, has the distinction of being the largest individual buyer of war savings stamps, having purchased \$500 worth. A campaign is on among the school children of Roseburg for the war cause and many are investing.

GERMANS MASS TO STRIKE BOLSHEVIKI

Battle Line Forming in Ukraine Territory for Onslaught.

WAR AGAIN CERTAIN

Berlin Fears Prisoners Held by Slavs May Be Killed—One-Day Strike Called Monday in Poland.

Amsterdam—German forces are already being concentrated in Ukraine to attack the Bolsheviki, according to a Berlin dispatch to the Tidd, and declarations looking to the active prosecution of the war against the Bolsheviki in North Russia also will be made at Berlin this week.

The German authorities are anxious regarding the fate of German prisoners in North Russia, whom the Bolsheviki are holding as hostages and who, Berlin dispatches say, may be killed if the Bolsheviki are driven to desperation. Germany has already served notice on the Bolsheviki authorities that she will enforce reprisals if the German prisoners are harmed.

Count Cernin, the Austro-Hungarian foreign minister, has notified Berlin that Austrian troops must not be used against Russia to support any policy which Austria has not approved, but only for purposes of self-defense against marauding bands.

Amsterdam—The Bolsheviki are making wholesale arrests of Germans in Russia and holding them as hostages, according to a Riga dispatch received by way of Berlin. Three hundred Germans and many pro-German Estonians at Dorpat have been arrested and transferred to Kronstadt. All the food in the Dorpat district has been confiscated and it is almost impossible to feed the German women and children.

The lives of those arrested, as well as Germans and German supporters who have not yet been arrested, are hourly in great danger, adds the dispatch, as the Bolsheviki threaten wholesale butchery. The Bolsheviki have officially declared the Baltic nobility outlawed.

The Lokal Anzeiger of Berlin says there is great excitement at Warsaw, Cracow and Lemberg as a result of the Ukraine treaty. The Warsaw newspapers are appearing in black borders. Soldiers, mounted and on foot, are patrolling the streets to prevent demonstrations. The director of affairs, Count Rostorovski, has resigned.

At Cracow the papers appeal to Polish parties to declare on one-day general strike. A general strike was called at Lemberg for Monday, when work was suspended in all the Polish factories, shops and government offices and the schools will be closed.

HUNS BOMB U. S. HOSPITAL

Relief Station is Shelled Without Success—No Fatalities Occur.

With the American Army in France—An American field hospital in a town within our lines apparently was the target for a German airplane which flew over it Sunday night and dropped several unusually heavy bombs.

The hospital, in which were a number of sick and wounded officers and men, was the building nearest the places where the German airman dropped two different sets of bombs.

Fortunately none of the missiles reached their mark, although the hospital patients and the residents of the town were severely shaken by the explosions. American anti-aircraft guns engaged the enemy, but without success.

The hospital probably will be moved to a less dangerous spot.

Price of Rice to Drop.

Washington, D. C.—Reduction in the price of rice is in prospect for April 1, the food administration announced Sunday. Distribution figures show that there is a surplus, after deducting the million bags purchased for export to Europe, of 150,000,000 pounds. This is ample for domestic requirements.

The increase in the cost of rice during the last few months, the administration explains, has been due to the fact that most rice mills are working to capacity in supplying the allies.

Belgian Courts Defiant.

Washington, D. C.—Belgian courts and lawyers have defied the Germans in Flanders, an official dispatch received here Sunday said. The trouble began with the instituting of proceedings in the court of appeals against the members of the council of Flanders, composed of Flemish supporters of the Teutons. The Germans ordered the court of appeals to cease its sessions, and in protest all other courts adjourned and lawyers refused to appear.

Glass Found in Candies.

Chattanooga, Tenn.—Twenty enlisted men of the 52nd infantry at Camp Forrest are confined to the base hospital as the result of eating candy containing particles of ground glass. At the camp it was said that the condition of some of the men is serious.