#### A HARD WAY AND AN EASY WAY

If the Load the Soldier Carries Is Properly Adjusted It Lessens the Amount of Energy He Has to Expend and Increases His Staying Powers.

There are two things, and two things only, which determine the length of a day's march for a soldier. The first is the amount of actual labor or mechanical work done while marching, the second is the degree of even distribution of this labor among the chief muscles used in performing labor. Now, labor, or work, is simply the product of the force overcome and the distance through which it is overcome. The forces to be overcome are by no means confined to the weight of the man and his pack. Many other forces are called into play in the course of a day's march

To illustrate, suppose the marcher has to carry a five pound weight on the end of a five foot stick. Suppose he places this stick across his shoulder with four feet behind him and one foot in front. By the simple exercise of bad judgment he multiplies the weight of his load by four; he has to pull down continually with a force of twenty pounds, and the shoulder must continually push up with a force of twentyfive pounds, all on account of that fivepound load which is carried on the end of the stick.

Another way in which energy may be wasted is somewhat more subtle and perhaps a bit harder to understand. but of equal or greater importance. It lies in the principle that work has to be done whenever a mass of any kind is changed in its motion. It takes more energy to start a street car, for instance, than to run it at uniform speed, It takes more energy to make its speed a little faster than to maintain it at the last speed-that is, whenever a body is given an acceleration a new force has to be used. Now, every time a soldier bobs up and down when walking he has to start the weight of his body and pack and gun upward and let them down again. To do this uses up more energy than simply to keep them moving up or down. In the one case only the pull of gravity has to be overcome, in the other the inertia of the soldier's head and body. And the faster this is done the more energy is used up per step. Hence it is that a slow walk can be maintained, not merely for a longer time than a fast one, but for a longer distance on a stretch.

Under the principle outlined above would come the loss of energy due to all swinging articles, such as bayonet scabbards, tin cups, tassels, etc. These have to be put in motion, then jerked back and stopped by bodily contact, then put in motion again. All this consumes energy, and work has to be done.

Again, any weight on the breast of a ldier or a tight coat or shirt, has to be overcome every time he breathes. And the deeper his chest expansion the more work he has to do with his breast every time he takes a breath. This amounts to an enormous total during a day's march. A loose coat and underclothes will cause him to travel with less expenditure of energy. It must be remembered that this is actual energy used up, taken from the store of energy available to march with.

Besides the up and down motion of a soldier while marching, he sways from side to side. Every article he is carrying and his own body are thus started and stopped in this swaying direction also. Thus energy is used up. Now, the upper part of his body sways further than does the lower part, so if the pack there must be, the heavier part of it should be placed just as low down the trunk as is convenient or comfortable. The heavier articles should also go as close to the back as possible, so as not to increase the leverage on the straps holding the pack to the body.

To sum up then: The gun should be carried with its center of gravity just a wee bit behind the shoulder, so as to balance the weight of the hand and forearm which keeps it steady (this is the usual practice, be it said); the pack should be as compact as possible, close fitting to the back, the heavy articles tightly packed in the lowest available space; no swinging articles should be allowed, not even tassels; the coat across the breast should be loose fitting. as should also the underclothes; a slow gait should be used; as small a rise and fall as possible of the body should be indulged in and as short a sway as possible. To the above may be added that the shoes should not have stiff soles, for every time the sole of a shoe is bent energy is used up.

To decrease the rise and fall of the body in walking the old "Indian walk" used by some surveyors is useful. It consists in slightly crooking the forward knee as the body is shoved for ward on to the front foot.-Philadelphia Press.

## Lithium a Soft Metal.

Lithium is a silver white, very soft metal, which forms the oxide or some other salt on exposure to the air and which decomposes water, forming the hydroxide of lithium. For these reasons metallic lithium does not occur in nature. Compounds are called lithium carbonate, lithium phosphate, lithium silicate, etc. The chemical products de rived from lithium minerals have found application in military affairs.

Heaven takes care that no man se cures happiness by crime.-Alfleri.

#### BIRTHPLACE OF BASEBALL.

Diamond as First Laid Out by Abner Doubleday.

In the new Delaware and Hudson station at Cooperstown, N. F., hangs an oil painting with an inscription that

MAJOR GEN. ABNER DOUBLEDAY

Graduated from West Point, 1842; com-manded 76th N. Y. Civil War Volunteers from Cooperstown. He originated our National Game of Baseball, and it was here to 1839 that he laid out the first base ball diamond. So reported the special Baseball Commission in 1907.

The decision that Abner Doubleday was the father of baseball and that Cooperstown was its birthplace followed a thorough investigation of many clews. The commission, which numbered among its members two United States senators and several high officials of the National and American leagues, spent a long time in completing the research.

At the time of the investigation Abner Graves, one of the original players, was a mining engineer at Denver, Colo. He proved to be the only survivor among those young Cooperstown boys who played so long ago in a village field, conveniently near Greene's select school. He reported that he saw Doubleday mark off the lines and place the bases and players virtually as they are in baseball today.

The game had previously been nothing more than the English rounders, to which baseball, as now known, bears as little resemblance as drafts to chess. Abner Doubleday, who was then twenty, received his inspiration one day while he was playing rounders, and he lost no time in marking out a diamond with a crooked stick. Later he blocked out his new scheme on paper but it is interesting to remember that he tried it first on Mother Earth.

The diamond he drew was thirty yards square. Players, amateur and professional, have come and gone; rule after rule has been modified; underhand throws and curved deliveries have arrived; a change has come in the size and weight of the ball, which originally was two and one half ounces of rubber covered with yarn and leather, weighing six and one-half ounces and measuring ten and one-half inches in circumference; in the wake of the ball have followed padded gloves, catchers' mitts, breast pads and masks, but the diamond of today still measures ninety feet along each side.-Youth's Com-

#### A CITY OF MANY SIEGES.

Verdun Has Figured In Wars Since the Time of Caesar.

The first appearance of Verdun in the pages of history was in the time of Julius Caesar, who established at Verodunum, as it was then called, a magagine for bis legions.

The Germans first attacked Verdun in the sixth century, when the Franks from the northwestern part of Germany took possession of the town. By the famous treaty of Verdun, made on this date in the year 843, Verdun formed part of the dominions of Lothaire. It was taken and annexed to the Gerbishops.

Verdun surrendered to France in 1553, but was not formally ceded to France until nearly a century later. ley through which we are now pass-During the French revolution, in 1792, ing, and so many blessings promise to the citizens of Verdun opened their gates to the Prussians after a bombard- must be ours, that we should join ment of a few hours. The French commandant committed suicide and the than ever before as we again render revolutionary government executed a thanksgiving unto him who guides number of others who shared the re- the destinies of continents and nasponsibility for the ignominious surrender, including fourteen girls who had offered flowers to the Prussian monarch. The Prussians were driven for a bountiful harvest of the fruits of out after having held the town forty-

three days. The Teutonic hosts again swooped take the town by direct assault, they invested and bombarded it, and the French, after a brave defense, surrendered the fortress with 4,000 men and large stores of ammunition. Verdun was the last place abandoned by the Germans, the troops retiring in September, 1873.-New York World.

#### Difficulties of Mining. Every time a ton of anthracite coal

and rock as hoisted from a mine an average of eleven tons of water must be pumped from the mine.

It takes about the same amount of power to pump fresh air into a mine as it does to hoist the coal out of it. In some mines with long drifts the car hauls may be as much as fifteen miles per round trip.-National Engi-

### Preserving the Pumpkin.

neering.

In colonial days pumpkins were pared, cut in thin strips of convenient size and dried for future use in "punkin" oread and "punkin" ple. This custom is one that we should imitate. Squashes and sweet potatoes, when they show the same method.—Good Housekeeping.

### He Was Posted.

"How old are you?" asked a little boy of his mother's caller. "Willie," said his mother sharply,

you must not ask a lady a question cracy. like that; it isn't polite." "Why, mamma," returned the youngtruth."-Boston Transcript,

### Real Nerve.

"Matt sure has got nerve, hasn't he?" an automobile salesman for a sample."

Pessimism is productive of paralysis and stagnation.

# The TILLAMOOK HEADLIGHT

Makes Clubbing Arrangement With

# The Oregon Farmer

Offers Unusual Opportunity to Its Readers

MONG our large circle of readers there are a great many who are in-terested directly or indirectly in fruit growing, dairying and other branches of farming. All of these naturally wish to keep in close touch with agricultural activities throughout the state; and to know about any fight which is being waged for the measures Oregon farmers want and against all sorts of schemes that are detrimental to the people and agricultural interests of this state.

We have, therefore, made a special clubbing arrangement with THE OREGON FAR-MER whereby any farmer or fruitgrower, who is one of our regular subscribers and who is not now a subscriber to THE OREGON FARMER, will be entitled to receive THE OREGON FARMER in combination with this paper at the same rate as for this paper

This offer applies to all those who renew or extend their subscriptions as well as to all new subscribers. If you are interested directly or indirectly in Oregon agriculture, do not miss this unusual opportunity, but send your order in now.

THE OREGON FARMER is the one farm paper which is devoting itself exclusively to the farming activities and interests of Oregon. It has a big organization gathering the news of importance to farmers, dairymen, fruitgrowers, stockraisers and poultrymen; and it has the backbone to attack wrongful methods and combinations and bad legislation, and support honest leaders and beneficial measures. We are confident that our readers will congratulate us on our being able to make this splendid and attractive clubbing offer.

TILLAMOOK HEADLIGHT, 1 yr \$1 50 OREGON FARMER, 3 years - \$3.00

By Our Clubbing arrangement, both for . . . . . . . \$1.50

### tion.

Proclaiming Thursday, November wing proclamation:

The year 1917 has visited a great cloud upon us, but so many rays of sunshine are cast across the dark valcome from the ultimate victory, which more unitedly and more reverently tions, states and individuals.

We should not only express our deepest gratitude to divine providence the soil, and the blessings which come from the industrial activity, but we should also be extremely thankful to down upon Verdun in 1870. Unable to our divine father for the true spirit of patriotism which characterizes our citizenship in this terrible hour of national peril. May we, therefore, mingle with our thankfulness for the material blessings bestowed by our heavenly father our most earnest prayers for divine guidance as patriotic Americans toward a successful solution of a world's democracy, and the ultimate establishment of a permanent peace between nations and of good will among men.

Each American is today privileged as never before in all history, to serve and to assist in preserving, not only his own country, but he has for the first time a chance also to serve the world and humanity at large in the preservation and extension of justice and liberty, rich gifts which have long

been ours to enjoy. As Oregonians we should feel especially proud and thankful that this state has stood so nobly at the forefront of the Nation in all patriotic matters arising out of the world war. Though our hearts may be sad as we say goodby to Oregon's splendid sons signs of spotting, may be preserved by who are offering their very blood to their country's cause, we should be great improvement in less than a consoled and gratified that each of us month's time. I used 7 or 8 bottles in some way, however indirect and incidental, is called upon to exert an influence on the side of democracy in

combe, Governor of the State of Ore-"she isn't supposed to tell the gon, by virtue of the authority in me vested, and following the time honored custom of the Governors of the several states in joining with the President of the United States, do "I guess yes. The other day he asked hereby proclaim Thursday, November 29, 1917, as Thanksgiving day; and I call upon the people of Oregon to pause from their labors in a spirit of prayerfulness, and to give thanks to Almighty God whom we worship for

Governor's Thanksgiving Proclama- the bounties and blessings and liberties which have been bestowed upon us and upon our commonwealth. In testimony whereof, I have here-

fixed this, 22nd

James Withycombe

Ornamental Fire Places Built of Brick and Stone. All Fire Places absolutely guaranteed not to smoke or money re-

Brick work of all kinds done on short notice. We make a specialty of repairing smoking Fire Places.

#### RALPH E. WARREN. TILLAMOOK ORE

## **DULL AND SHARP SHOOTING PAINS**

Michigan Lady Suffered Such Pains In Back and Head, But Says Cardui Stopped These Bad Spells.

Palmyra, Mich.-Mrs. Chas. T. Fuller, of this place, writes: "In 1911 I got run-down, and I suffered great pain...with both dull and sharp shooting pains ... also back and head. I was weak and could only drag around, and should have been in bed, for I really wasn't able to be up. At times I would have spells that would be so bad I'd have to go to bed, and suffered intensely ...

I decided to try Cardul, and saw a and was stronger ... I got so much better that my strength returned and my work was easy for me. Cardui did me a world of good. It built me up in the struggle against military auto- health and strength. I haven't had one of those bad spells since, I haven't Now, therefore, I James Withy- had to take any more medicine since or have any doctors either and have been able to do my work right along ... I recommend it to other women highly as the best medicine I know of for women who suffer from female

trouble. If you suffer from female troubles, follow this advice. Get a bottle of Cardul today and give it a thorough trial. It should help you, as it has helped thousands of other women in the past 40 years. At all druggists.

## A PLAGUE OF FEAR

Vague Terrors Bar Lots of Folks From Living on the Land.

DREAD SNAKES AND INSECTS.

They See Dangers and Perils In Country Life That Do Not Exist, and So About Animal Bites and Poisons.

Fears of injury and even death from snake bite, terror occasioned by dangers imaginary and unseen, keep many nervous people from living on the land, and these senseless fears play a larger part than most people imagine in keeping people huddled in apartment houses, crowded into towns and cities. And the cost of living soars and soars.

Snake and insect poisoning terrorizes millions of well meaning men and women, when, as a matter of fact, danger from falling while running the lawn mower is much more real. Fear seems to become a obsession, and the word "deadly" creeps into conversation at every verse end. The rattlesnake is 'deadly." The copperhead and moccasin are "deadly." So is the wholly mythical puff adder. In hardly less degree is the tarantula "deadly," while varying lethal capacities are ascribed to the centipede, the scorpion, the kissing bug and sundry other forms of insect life. Pseudo science to the contrary notwithstanding, there is no living thing within the boundaries of the United States of America whose bite or sting is sure death or (with one possible exception) even probable death.

There are five varieties of venomous serpents in the country, three of them Crotalids and two belonging to the elaps family. The elaps are rare. The crotalids (rattlesnake, moccasin and copperhead) are common and of the widest geographical distribution. Yet, on the basis of actual evidence, the amazing fact stands out that only about eighty persons, so far as is ascertainable, have ever died from snake bites in the United States.

Be it remembered that death following snake bite is not necessarily the same thing as death from snake bite. Error in treatment plays no small part in vitiating the statistics. For "error" read "whisky." Whoever is primarily responsible for the hoary superstition that liquor in huge doses is useful in snake poisoning has many a life to answer for. A whole bottle of raw whisky forced down the throat of a man unaccustomed to alcohol is pretty likely to kill him and is absolutely certain to cause grave poisoning.

Fully as much terror attaches, in the perhead. This is a suggestive bit of as an adder or viper on the western hemisphere and never has been one, unless it came carefully pickled in a jar. What passes for the supposedly deadly reptile is the common hog nosed 29, as Thanksgiving day in Oregon, unto set my hand and caused the great or bull snake. It is about as dangerous cies. When this straggler was capman empire in 939 by Otho I. and plac- Governor Withycombe issued the fol- seal of the State of Oregon to be afone of the best "bluffs" known to natural history.

Diseased imagination could invent no creature more horrific of appearance than the tarantula. Its bristling and hostile aspect, the swift ferocity of its rush, its great size and its enthusiastic preference for combat as against flight are sufficient to account for the fear and respect in which it is generally held. But, though several species of the huge spider are native in the United States and others frequently drop out of banana bunches from South and Central America, to the discomfiture of the unsuspecting grocer, no authentic instance of death from tarantula poison in this country is obtainable.

In some sections of the country the spider hysteria prevails. People shiver every time they see a spider. Yet in all the United States there is known but one poisonous spider. Strangely enough, the one dangerous spider on the American continent is small, obscure and practically unknown. Latrodectus mactans is its scientific name. It is about the size of a large pea, black, with a red spot on the back-a useful danger signal-and spins a small web in outhouses or around woodpiles. But few specimens have ever been identifled in this country.

The only insect which really kills is the mosquito, yet less fear is expressed about its activities than about any other poison carrying insect or snake. Compared with the mosquito as a real menace, all the combined brood of snakes, scorpions, centipedes, tarantulas and other pet bugaboos of our childish romanticism are utterly negligible -are as figments to reality, as shadow to substance.

A clear understanding of these popugreatly in giving assurance of safety to the man or woman who would till the soil, who would work in the open delds, who would live in the country .-Los Angeles Times.

#### A Lost Friend. "I'm up against it. I like Brown

very much, but I see no way now to avoid losing his friendship." "What's the matter?"

"He has asked me to lend him money. If I refuse be'll hate me; if I lend it to him I shall hate him."-Detroit Free Press.

All He Could Stand. Wife-Tom, I want \$20 for pin money. Hub-Great Scott! Here it is, but I'm darned glad you don't want to buy spikes.-Boston Transcript.

Friends become foes and foes are recond L -Latin.

#### THE STORAGE BATTERY.

Willing Servant, but Is Delicate and Requires Care.

If you place a fine, twenty-one jewel watch in a tin case you will not expect it to receive very respectful treatment at the hands of any one who does not know the value of the movement that the case contains.

Probably the psychological effect of the rough appearing storage battery box is somewhat the same upon the average motorist. Could be realize the delicacy of the parts inside and the care and Prefer Crowded Cities-The Truth time required in their manufacture and assembly he would be more inclined to treat his storage battery as he would his full jeweled watch inclosed in its eighteen carat gold case.

When we consider that this box, occupying scarcely more than a half of a cubic foot of space, furnishes the current that takes the place of back breaking crank turning, that lights the headlights, ignites the spark and operates the horn, we will be impressed with the fact that it is indeed the very essence of concentrated power.

But this power cannot be delivered unless it is properly stored. In other words, the storage battery is not a power producer, but rather a power reservoir. This reservoir is filled at a certain moderate rate by means of the generator, which should operate whenever the engine of the car is in motion. If we look upon the generator as supplying a small, steady stream of current to the reservoir and consider that the starter represents a drain on this reservoir comparable to that prevailing when the stopper is removed from the waste pipe of a wash bowl we will understand the reason for the statement of the battery manufacturer to the effect that the current demanded for one minute's operation of the starter requires at least twenty minutes' normal running of the car for full replacement, This fact will also possibly serve to explain why adjustments of the carburetor and spark plug making for easy starting of the engine add to the life of a battery through the elimination of undue strain caused by the starter.

The storage battery is a willing servant and will deliver as much or as little current as is required. It will give up its last ounce of strength in a vain effort to crank and start a stiff and balky engine until there is scarcely power enough remaining to furnish the tiny current necessary for the formation of the spark of ignition .- H. W. Slauson in Leslie's.

#### Man Eating Sharks.

All of the trained and experienced observers with me agreed in saying that near our coast line there was but little danger from sharks for a man swimming. Accidents do occur, but they are wholly exceptional-unlike what is true in the Indian ocean and around Austracountry districts, to the puff adder or lia. The white shark is undoubtedly a sand viper as to the rattlesnake or cop- | man eater, and Coles, who is probably more competent to pass judgment on superstition, since there's no such thing | the question than any other man in the United States, believes that the four bathers killed and partly eaten off the New Jersey coast in the summer of 1916 were all victims of one rather small straggler of this formidable speman bones and flesh in it, and with its capture all attacks on swimmers ceased.—Theodore Roosevelt in Scribner's.

## The Flag at Trenton.

The flag "that Washington had with him when he crossed the Delaware to attack Trenton" was not the Stars and Stripes. Washington crossed the Delaware in December, 1776, and the Stars and Stripes did not have an existence until the June of 1777, when it was voted into being by the congress. The flag that waved over General Washington on his way to and from Trenton consisted of thirteen stripes, alternate red and white, as at present. with a blue canton emblazoned with the crosses of St. George and St. Andrew, as in the British flag. The first time the present Stars and Stripes were flung to the breeze was on the day of the battle of Oriskany at Fort Stanwix, Aug. 6, 1777.-Exchange.

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The Origin of "Usher." Speaking of ushers, I learned an interesting thing from an English manager. He told me that in the old days the theater men used to sit around tables and drink during a performance, and if they became boisterous or annoying the manager sent waiters down to hush them up. These men were officially known as hushers, but as a cockney cannot say his h's-where they belong-they became known as 'ushers!-Rob Wagner in Saturday Evening Post.

Camouflage Not New.

The art of camouflage is nothing new to the American Indian, as the Christian Science Monitor points out. Ages ago, comparatively speaking, before be had heard anything about firearms, he lar fears and superstitions would aid was accustomed to steal unobserved on a herd of buffaloes by the simple device of decking himself out with a buffalo skin and horns. If that wasn't a resort to camouflage, what was it?

> Spartan Training. "Why is it that all the old lawyers

are prosperous?" "Well, a lawyer has to learn to live on nothing for the first three or four years. Naturally, when the money does begin to come in, it is all profit."-Louisville Courier-Journal.

#### A Practical One. "Have you any theories as to self

help? "Certainly. Mine is to help yourself to anything in sight you can."-Baltimore American.

Beware of bad beginnings. He who does not take the first wrong step will never take the second.