CAMPING
AND
WOODCRAFT

A HANDBOOK FOR VACATION CAMPERS
AND FOR
TRAVELERS IN THE WILDERNESS

BY
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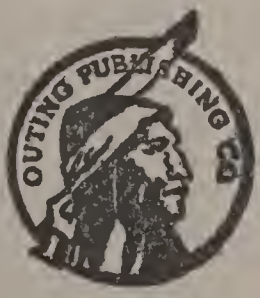
VOL. II
WOODCRAFT



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CHAPTER VIII

PACKS FOR PEDESTRIANS

The simplest way to carry a light marching kit is in a blanket roll. It is made up as follows: Spread the shelter cloth or tent on the ground, fold the blanket once, end for end, and place it on top, with same amount of cloth left uncovered at front and rear. Divide the other equipment into two piles of equal weight, arrange one of these along one end of blanket, the other along the other end. Fold free sides of shelter cloth over all. Roll the whole affair as tightly and smoothly as possible, and secure with straps or cords, one at middle and one half-way to either end, making a roll about six feet long. Then fasten each end tightly with a slip-knot, leaving enough free cord on each to tie the ends of the roll together in horse-collar form. It takes two men to make a neat job of this.

The roll is worn over one shoulder with ends over opposite hip. Some pedestrians like the blanket roll because it saves the expense and weight of a pack-sack or harness, and because it can be shifted from one side to the other. In reality nothing is gained in ease of carrying, but rather the contrary. All the weight is thrown on one shoulder at a time, and there is no help from the hips. A man can carry a heavier load in a pack-sack with less fatigue in the long run.

The blanket roll is oppressive in hot weather, and its pressure on the chest is a handicap at all times. It is much in the way when one has to climb or crawl, and even more so when you go to shoot. It will not hold half the equipment mentioned in

my summer list, and if a haversack is added, you have a particularly irksome "flip-flop" to impede you, and the "advantage" of shifting weights is then lost. A blanket roll is suitable only for a day's hike and a one-night camp; even so, it is much less comfortable than a light pack on one's back.

PACK HARNESS.—I leave out of account simple tump lines and the like, because they are practical only for canoeists carrying heavy burdens across portages.

A pack harness is an arrangement of straps for carrying an outfit made up into a bundle inside the blanket, or for toting two duffel bags strapped side by side. The illustration (Fig. 23) shows one with tump or head-band added. If bags are not used, the bundle must be wrapped in a pack cloth of strong waterproof canvas (the tent or shelter cloth will not do, for it needs protection from rough usage). As to this method of packing I quote from the book on *Winter Camping* (Outing Handbooks) by Warwick S. Carpenter, who has had more experience with it than I:

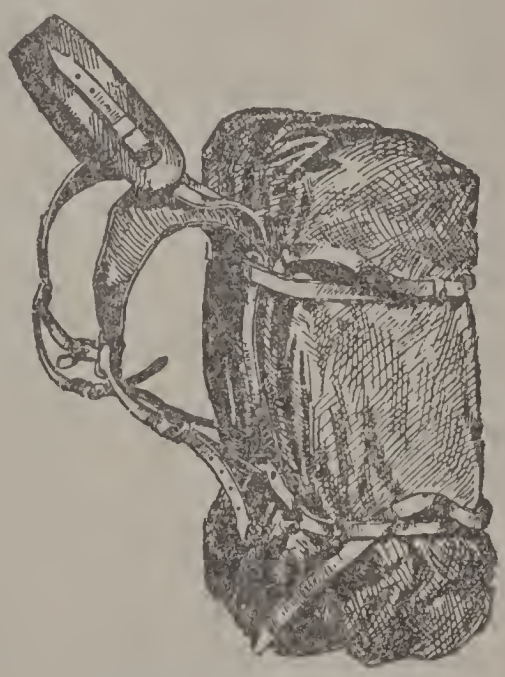

Fig. 23.—Pack Harness with Head Strap

"The arrangement that I have frequently used is that of the pack cloth, with the outfit and blankets or sleeping bag folded inside. Its flexibility for various sizes of load commend it strongly, and the pack cloth may be used as shelter besides, or as a ground cloth in a lean-to or tent. The method of making this pack is to lay the pack cloth on the ground and place the blankets or sleeping bag folded once on top of the cloth. Place the outfit as compactly as possible on the blankets or bag and fold it tightly in, making the bundle . . . consider-

ably longer than it is wide and thick. Then take the end of the pack cloth which runs along the bottom of the pack, and bend it up over the folded bundle. Next take the sides of the pack cloth and fold them over, or if there is much cloth, roll the whole pack over from side to side, keeping everything snug and tight.

This will leave the bottom of the pack cloth folded inside and the sides of the cloth lapping all around so that no snow or wet will sift in at the bottom. Fold the still open top down as a flap, just as you would the end of a paper package, with the folded flap at the side of the pack away from the back. Pass a rope or a strap lengthwise around the whole and then attach the harness with its shoulder straps or tump line. Such a pack is absolutely secure against snow or rain.

The best form of pack-harness is that which is made with a broad shoulder piece shaped like a sailor's collar, the wide bands of which run well over the shoulders and about eight inches down in front. From the back of the collar, about five inches apart, two vertical straps run downward about fifteen inches to the small of the back and bend up under the arms to meet the broad bands in front. There they are fastened with buckles, and the straps are made long enough to permit considerable taking up or letting out. Riveted horizontally to the straps behind, one at the height of the collar piece and the other fifteen inches lower, are two straps six feet long, which go around the pack. This harness may be bought of any dealer in camping outfits, but the collar portion of all that I have seen is made of heavy canvas. This very quickly wrinkles and draws up and cuts the shoulders. It is far better to have it made of a very heavy piece of leather.

One of these that I put together myself has been used for years and the broad bands that go over the shoulders are still as smooth and comfortable as when new. To the back of the collar should be riveted two short straps about six inches long, extending upward, as the others go downward. To these can be buckled a broad tump which goes over the forehead. It will be adjustable with the buckles or can be removed entirely."

The chief merit of this kind of pack is its adaptability to any size or shape of bundle. On the other hand, the weight of harness and pack cloth together (3½ to 5 pounds) is considerably more

than that of a roomy pack-sack. True, the cloth can be used as a ground sheet under the blanket at night, but that is not needed if one has a sleeping-bag, or a browse-bag (and rubber cape to go over it when things are wet) which weighs but a pound and makes a far better bed. Pack cloths are made from 5 x 6 to 6 x 7 feet, which is too small for a shelter cloth. Another disadvantage is that whenever you want to get at anything in the pack, the whole thing must be undone and repacked.

The tump or head-band is a good addition not only to a pack harness but to almost any other kind of pack used for carrying heavy weights. Generally it will not be used until the shoulders tire; then it relieves the strain. It is an advantage in climbing steep hillsides. When fording a swift stream, crossing on a foot-log or fallen tree, going over windfalls, crossing ice, or passing other dangerous places, the shoulder straps may be dropped, the head-strap alone being employed; then, if you slip or get overbalanced, the load can be cast off instantly by throwing back the head, and you save your bones or possibly your life. When the tump is not in use, drop it down over the chest.

Military Knapsacks.—In most European armies the infantry carry small knapsacks made of leather, stiffened with a framework of wood or bamboo, or reinforced at the sides to give a certain rigidity. Inside the knapsack are stowed spare underwear, fatigue shoes (if any), a reserve ration, spare ammunition, and various small articles. The blanket, or overcoat, is rolled tightly in a shelter half and strapped around the top and sides, and a mess kettle generally is strapped on the outside. In some models, as the German, the interior is divided into compartments to separate and protect the different articles and to assure a constant distribution of the weight.

A military knapsack is too small for campers, it is much too heavy for its size, and it obliges the wearer to carry most of his outfit outside, attached

to it, or strapped separately to the person. Such an arrangement is bad, for various reasons. A blanket roll strapped around the outside does not fit well on a soft sack. The knapsack must be stiff, therefore heavy, and it must be narrow, or the complete pack will project too much beyond the shoulders, worrying the bearer by preventing the free swing of his arms, and proving a serious obstacle when he has to go through the matted undergrowth of a forest. Besides, the blanket is needed as a soft pad against one's back. If worn on the outside, it must be protected by something. A thin tent or shelter cloth will not do, because it, too, needs protection against snags and abrasion. If a poncho or cape is used for the purpose, it must be a heavy one, to stand the wear, whereas it should be light from every other consideration; and your waterproof is best carried where you can get at it and don it quickly.

As for "flip-flops" and "stick-outs" in your equipment, they are anathema. Suppose you have to cross a stream or a deep gulley on a fallen tree. If there is a dangling article about you, such as a haversack, it will swing to one side and tend to throw you off balance. If anything sticks out of your pack, or is tied on the outside of it, the thing will everlastingly be catching in vines and bushes. Taking it day in and day out, in all kinds of country, the best pack is a commodious sack on your back that contains everything you carry except what goes in your pockets and in one hand.

The soft canvas knapsack formerly used by our own army has no compartments save a narrow outside pocket, under the flap, and is not stiffened. It is cheap (from dealers in second-hand military equipments), very strong, and serviceable as a carryall for one's personal duffel aside from shelter and bedding. This pattern, like most other military ones, is ill-suited to carrying heavy loads, because the points of suspension of the shoulder straps (see Fig. 24, *A, B*) are too near the outer edge of the knapsack

and consequently drag on the weakest part of the shoulders, next to the arms. The strain should come nearer the neck, where the vertebral column will help to support it.

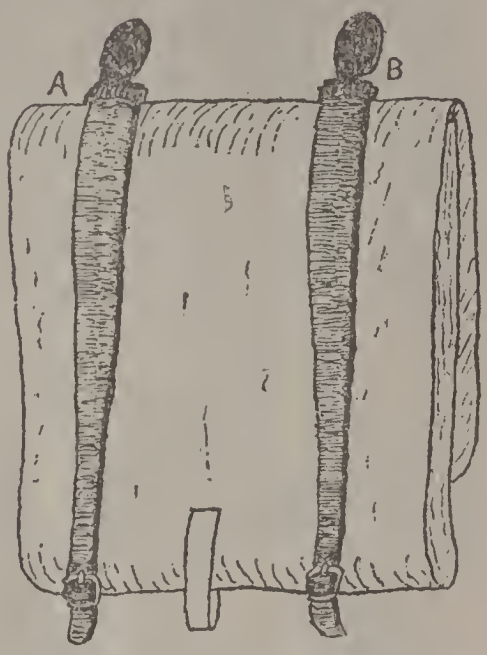

Fig. 24.—Old U.S.A. Knapsack (back). A. B. points of suspension

Old types of knapsacks had the straps crossed over the breast — about the worst arrangement that could be devised, since it compresses the bearer's chest and interferes with his breathing. A horizontal strap across the chest to keep shoulder straps from spreading is likewise oppressive, and bothersome because it must be unbuckled before the knapsack can be cast off.

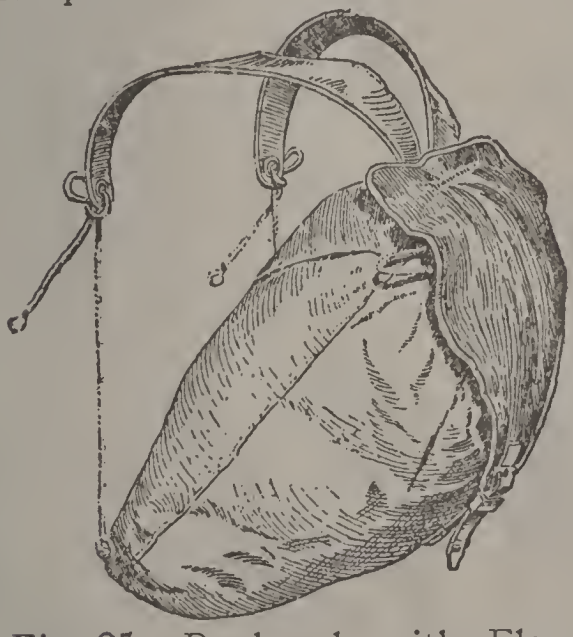

Fig 25.—Rucksack with Flap

*Rucksacks.—From time immemorial the chamois hunters of the Alps have used a simple but ingenious pack sack for carrying light kits and game. This is called a rucksack. It is to-day the favorite packing device of European Alpinists and pedestrian tourists, is much used as a game bag, and, of late years, has

*_Rucksack_ is a German word meaning "back-sack." In English the umlaut sign (two dots over u) is dropped and the pronunciation changed so that ruck rhymes with stuck.

come into vogue in our country for light mountaineering and for walking trips in settled regions. In tourists' patterns the opening is protected from dust and rain by a flap (Fig. 25), and one or two covered pockets may be added on the outside (Fig. 27) for such articles as may be wanted from time to time on the way. In its original form the rucksack is sketched in Fig. 26, which shows an open-mouthed bag of light cloth closed by a puckering cord.

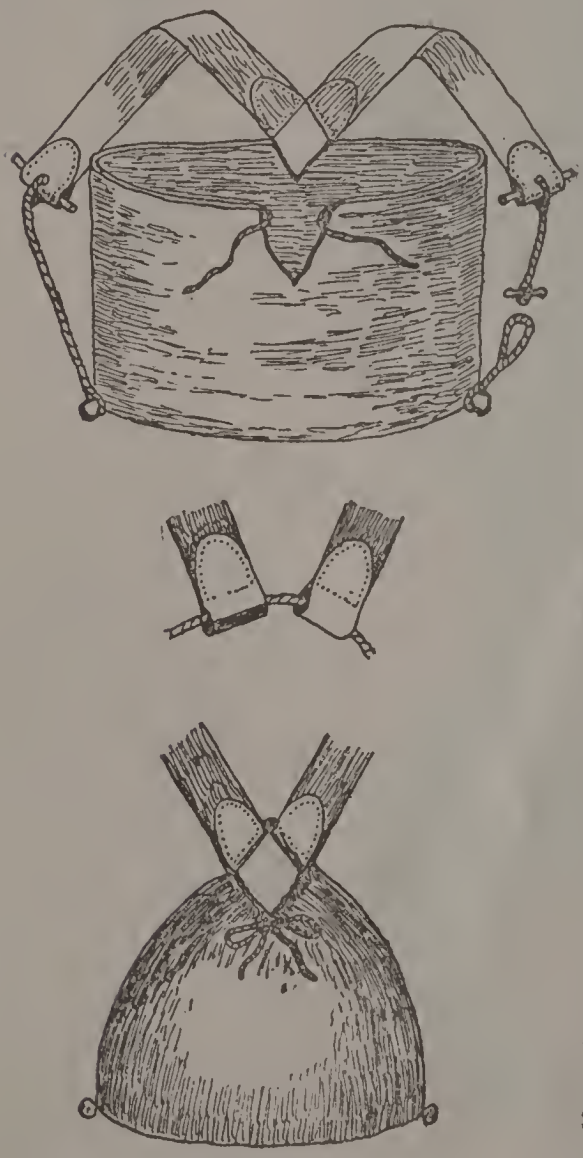

Fig. 26.—Plain Rucksack (after Payne-Gallwey)

The rucksack is distinguished from all other packs by the method of attaching its shoulder straps, which swing directly from the puckering cord at the top, and are fastened below by toggles, hooks, or buckles. (Fig. 25 shows another fastening by a cord tying into the shoulder strap with a looped knot; this is easily adjustable, and a tug at the end of the cord will loosen the pack instantly). The point of suspension, then, is in the center of the sack's top, instead of near the upper corners as on a military knapsack. This brings the strain over the strongest part of the shoulders, where it is least felt.

Since the rucksack is made of light cloth, with no stiffening, it is very capacious for its weight: one

that holds half a bushel can be rolled up and tucked into the pocket of a hunting coat. When filled with spare clothing and such other articles as would be carried by one who went afoot through well settled districts and put up for the night at inns or farmhouses, the weight of such a pack is hardly noticeable. On the hike, one's coat or cape, rolled up, may be carried under the flap. The plain rucksack, without flap, is easy to get into, since all you have to do is to pull one end of the puckering cord and the bag is wide open: this makes it handy as a game bag. The weight, being carried low and tight against the body, does not tend to overbalance one in difficult climbing—a point of consequence to mountaineers.

But the rucksack is a poor device for carrying such a kit as is required by one who sleeps out and totes his bed and shelter with him. Its contents bunch up into a rounded lump (see Fig. 27), and heavy articles work to the bottom. Everything gets jumbled up. Worse still, the pack "rides" so low that it presses hard against the small of the back, which is the worst of all places to put a strain on.



Fig. 27.—Rucksack in Use

I tried out the rucksack thoroughly, years ago. It is a good contrivance for carrying the day's necessities when you are reasonably sure of reaching a house or camp at night, being never in the way like a haversack or blanket-roll, yet more capacious. The one illustrated in Fig. 25, made of thin brown waterproof canvas, 21 inches wide by 22 inches high, weighs 12 ounces. Another outfitter supplies one of about the same size, in waterproofed olive-drab cloth, with an outside pocket, that weighs only 9 ounces. One of these is an excellent carrier for a feather-

weight camping kit, but for packs of over 15 pounds, I will have none of it.

An interesting modification of the rucksack, which brings the weight where it can best be borne, is the Norwegian army pack sack (Figs. 28, 29). In this the sack is united to a support of oak or ash, which comprises a horizontal wooden crosspiece (*A*) and two vertical pieces (*B, C*) curved to fit the back. Bag and frame are joined at the bottom by two rings, which are sewed on leather bands and attached to the horizontal piece of wood, at one end

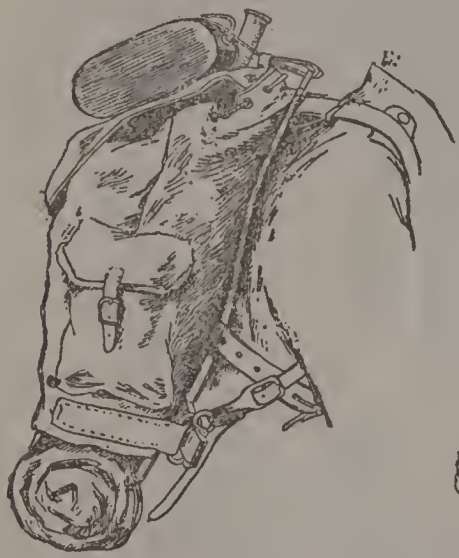

Fig. 28.—Norwegian Knapsack in Use



Fig. 29.—Norwegian Knapsack (Back)

by a spring placed on the traverse, and at the other by an eyebolt. At the top they are joined by a strap, one part of which is sewed on the middle of the back of the knapsack, the other, or free part, being passed through a slit made in the upper part of the support, and bent back and buttoned on itself.

The slings of the knapsack draw from the center, as in a rucksack, but are attached to a small arch-shaped brass piece riveted to the upper part of the support. Their free ends have hooks which engage in the eyes of eyebolts fixed at each end of the lower traverse of the frame. On each sling, at the height of the armpit, there is a double button on which is fixed a counter sling furnished with a brass hook,

which latter is hooked to the belt from the under side, helping to support cartridge pouches. The knapsack is 17½ inches high, 14½ inches wide, and weighs 3½ pounds. I have seen lighter ones made for civilians. The lower crosspiece rests above the hips, on the pelvis, which, the designer says, "is the most suitable part of our framework to support burdens." The shoulder straps have little more to do than keep the pack against the back.

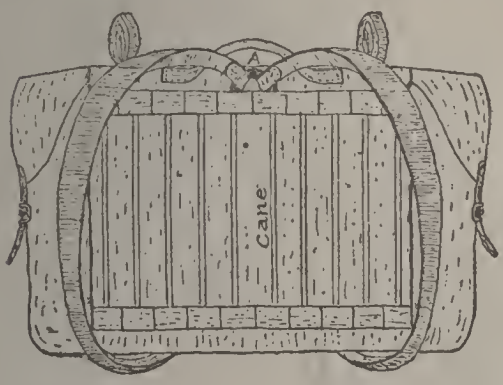

Fig. 30.—Tourist Knapsack (back)



Fig. 31.—Nessmuk Pack Sack

Another and lighter way of stiffening a knapsack is to reinforce the sides and insert pieces of cane vertically in small pockets on the back (Fig. 30). This also allows air to circulate between the pack and the bearer's back, preventing excessive sweating. (When our old army knapsack was worn, in summer, men would sweat clear through the heavy canvas). The tourist's knapsack here illustrated is pliable and yet has enough rigidity to maintain a neat form. Of course, it is not suitable for carrying a heavy weight. In this case the slings are suspended centrally from a D-ring (*A* in the figure). A handle like that of a shawl-strap is provided, so that the knapsack may be carried like a satchel when one is in town. Straps on top are provided to carry the coat or cape.

Pack Sacks.—I use this term specifically to denote sacks that are roomy enough to take inside a whole outfit for the pedestrian or canoeist who camps out. It would be a waste of space to de-

scribe half the patterns that are listed by outfitters, as there are so many that are ill-designed. Three examples that have good "points" will suffice:

The so-called "Nessmuk" pack sack (he did not design it) is shown in Fig. 31. It is made of medium-weight brown waterproof canvas. The bag has boxed sides that taper from about 5 inches width at bottom to 3 inches at top (not shown in illustration) and it is about 3 inches narrower at the top than at the bottom. To the top edge of the bag proper is sewed a throat piece like that of a duffel bag. When the bag has been packed, this throat piece is gathered together and tied like the mouth of a grain sack, so as to exclude water. You may take a header while fording a stream, or capsize your canoe, without getting water inside the pack. The extension also allows the sack to be packed fuller than normal, so that when carried the pack rises as high as one's collar. It is somewhat in the way when one is making up his pack, but. when tied, there is no risk of losing anything out of the bag.

This pack sack carries higher, and hence more comfortably, than a rucksack. It will contain a light camping equipment, say one of twenty pounds. The slings draw from the center, but are somewhat over 2 inches apart at top of pack, and so do not pucker the bag so much, nor throw its top so far backward, as if they drew straight from a D-ring.

The common pattern of "Nessmuk" pack has light web shoulder straps, which are an unmitigated nuisance: they wrinkle up and cut like ropes. Get the better grade with leather straps. I have one of this kind, 20 inches wide by 15 inches high, that weighs 2 pounds 2 ounces. It would be better if the throat piece were a couple of inches longer. The buckle for the flap strap should be placed as high as the upper hole of the strap. There is a similar sack 5 x 16 x 18 inches, with an outside pocket almost the size of the face of the pack, which, with leather slings, weighs only 24 ounces.

For regular packing, when one sleeps out, the best pack sack at a moderate price that I know of is what is known as the Duluth, or, from its inventor, the Poirier pattern (Fig 32). Originally made for trappers, timber cruisers, and other professional woodsmen, it is now used by many sportsmen as well. The Duluth sack has no boxed sides, but is sewed up in the form of a simple bag, and so is made wider and higher than boxed ones of equal capacity.

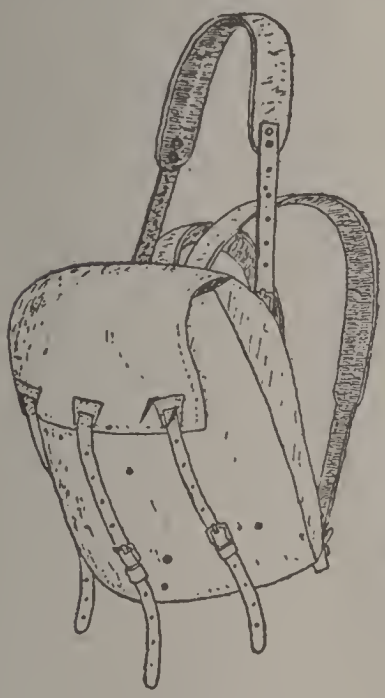

Fig. 32.—Duluth Pack Sack

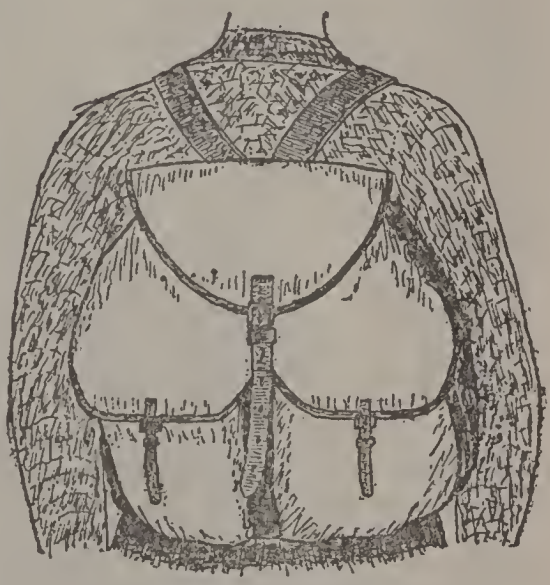

Fig. 33.—Whelen Pack Sack

The advantage is that one's blanket, which goes in first, as a pad for the back, can be folded two feet square, or a little more, and consequently in fewer thicknesses; hence the bag packs flatter than a boxed one and does not bulge so far backward at the top. Poirier makes his pack sacks in three grades: (*A*) 12-oz. duck, heavy grain leather shoulder straps and canvas head strap, all straps and buckles fastened with copper rivets and burrs; (*B*) 10-oz. duck, canvas shoulder and head straps; (*C*) 10-oz. duck, canvas shoulder straps, no head strap. By all means get the *A* grade, as canvas slings will

wrinkle when wet and cut the shoulders. The standard sizes and weights, in *A* grade, are as follows:

No. 1.	24 x 26 inches.	2¼ lbs.
No. 2.	26 x 28 inches.	2½ lbs.
No. 3.	28 x 30 inches.	2¾ lbs.

For a pedestrian the No. 1 or No. 2 is large enough. A canoeist will find one of the larger ones ample to hold all the duffel for a single-handed cruise, and a week's provisions; but if he chooses to carry more on the outside, then, when he comes to a portage, the surplus articles can be piled on top of the pack, the head strap will be put to use, and he can tote as much as with a tump line, or more, because the shoulders assist.

The shoulder straps of the Duluth sack start from a common center, where they are riveted to an inside piece of leather. They fork from between one's shoulder blades like a pair of suspenders. The flap is half as long as the sack, and it is fitted with three *long* straps whereby the sack may be adjusted snugly to a large or small load. As the sack has a wide mouth, it is easy to pack and to get into. The three straps hold down the flap closely at the corners as well as in the center, and so keep out rain and snow and prevent things spilling out. There is no throat piece; but a wise woodsman stows his perishables in light waterproof bags, anyway.

The pack designed by Captain Townsend Whelen, U. S. A., has an ingenious arrangement for regulating the size of the bag according to what is carried. It consists of a many-gored bag (Fig. 33), about 18 inches wide by 22 inches long without the gores. The bag can be let out enough to carry a small deer, feet up, or, by means of a strap that goes around it from top to bottom, it can be triced up, gores folded inside, until there is nothing of it but a little knapsack for carrying one's daily equipment. There are two roomy pockets on the outside, one of them, for the camera, made so that

no water can get into it. The arrangement of straps is such that all the strain is put on them instead of on the canvas. Made of 12-oz. waterproof khaki duck, the Whelen pack sack weighs 2⅜ pounds.

Combination Pack Sacks.—Since "an ounce in the morning is a pound before night" when one goes afoot, and "a mile uphill is five on the level," many ingenious contrivances have been devised to make one article in the outfit serve two or more purposes. So we have various combinations of pack and tent, pack and sleeping-bag, pack and stretcher-bed, and so forth. Though I do not go so far as the old-timer who averred that "all combination tricks are pizen," yet I am apt to be rather shy of them. An article can serve two purposes, but it can't do them both at the same time, and in either case it is likely to be a makeshift.

If a pack does not "ride" just right, or if it is not easy to fill and easy to get into at any time, it is faulty. If the tent, or the sleeping-bag, or the stretcher-bed, is altered from what it should be to accommodate it to some other use, it is vexatious. Most of these inventions defeat their own purpose by being almost, if not quite, as bulky and heavy as the separate articles would be if made right. For instance, you can use a sleeping-bag as a pack to stow your duffel in, but to carry it you must have a harness of some sort, and that harness will weigh over a pound. I would rather tote an extra pound and have a pack sack, for it is so much more convenient. The notion that a sack is good for nothing in camp is wrong; you need a receptacle for everything that is not in present use, lest things get scattered and lost. Or, if long training has made you habitually careful in such a matter, you may do with that sack as I often do; turn it inside out, stuff it with dry leaves, put it under your filled pillow-bag, and sleep with your head comfortably high.

Pack Baskets.—In the forests of the northeast-

ern states and in the maritime provinces of Canada, a favorite carrier is the pack basket, made smaller at the top than at the bottom, flattened on the back, and provided with a cover. An average size is about 18 inches high, 17 inches wide at the bottom and 15 at the top, by about 12 inches deep. Various sizes can be bought from outfitters in the cities, who also supply them with waterproof canvas covers (Fig. 34). One of the latter kind, holding 1¼ bushels, weighs 4¾ pounds. A larger one, 18¾ inches high by 18 by 14½ inches, weighs 7 pounds;



Fig. 34.—Pack Basket (covered)

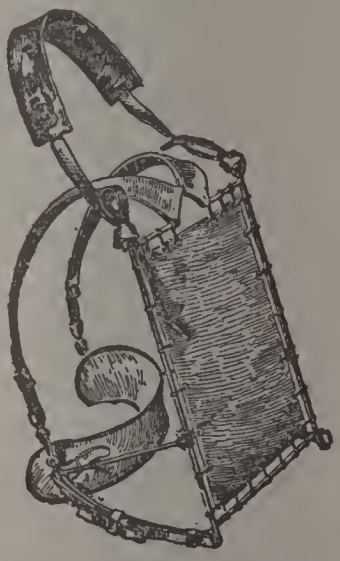

Fig. 35.—Abercrombie Pack Frame

it fastens with lock-buckle and strap. Uncovered baskets weigh from 2½ to 5 pounds, according to size. Common ones generally are too small at the top for easy stowage of bulky articles; but if the basket is made more than 12 inches deep it will drag back unmercifully on the shoulders.

To my notion, the best that can be said of the pack basket is that it is a bully thing in which to carry canned and bottled goods—when some other fellow does the toting. It is too heavy, too abrasive, and too bothersome in the brush and thickets, for average foot travelers, and it does not stow so well in a canoe as a pack sack of equal capacity.

PACK FRAMES.—The far Northwest has another

pet rig for the "human beast of burden": the pack frame. In its simplest form this consists of two vertical or slightly flaring pieces of wood joined by cross-bars near the top and bottom, covered with a sheet of canvas, and fitted on one side with broad straps for the shoulders, on the other with straps, ropes, or thongs, for tying on the load. One model has a little skeleton shelf on the back, near the bottom, for the pack to rest on, this shelf being fitted with hinged metal supports so it can be folded down when not in use. Such a frame leaves an air space between the body and the pack, and so does not sweat the carrier's back like a knapsack. A load of any size or shape can easily be fixed on it. The weight is comfortably balanced and divided between shoulders and hips. The upright pieces of wood are of such length that their lower ends support the whole load when the man sits down to rest, as on a log, for instance.

Figure 35 shows a new invention in pack frames, by D. T. Abercrombie. In this the frame, and consequently the load, is kept quite away from the lower part of the back, being joined to a hip strap by a rod with horizontal arm on each side. There is a tump strap, as well as shoulder straps. Heavy weights can be carried with this contrivance, and, no matter how hard or irregular the load may be, it cannot hurt the back. The frame complete weighs only 2½ pounds.

Pack frames are not suitable for ordinary pedestrian trips, of course, but have such merit for portaging heavy and hard or sharp-cornered baggage that I mention them here, while on the subject of packing on human backs and shoulders.

CANTEENS.—One may travel where water is hard to find, though this seldom is the case in a timbered region. The best canteen is one of aluminum, which neither leaks nor rusts like the old-fashioned tin affairs. It should have a canvas cover with felt lining. When the felt is wet its moisture cools the water in the canteen by evaporation. The can-

vas cover prevents too rapid evaporation, and keeps the canteen from wetting one's clothing. At night, or in case of illness, the thing can be used as a hot-water bottle, the insulation keeping the water hot for a considerable time. The best pattern is the present regulation army canteen, which is shaped like a flat flask, but with one side rounded a little and the other concaved to fit the body. It has a flat bottom, so you can stand it up. The aluminum screw-cap, held by a chain, cannot jolt out like the corks of common canteens.

To cleanse the vessel, boil it. To sterilize suspected water, fill the naked canteen and place it, unstoppered, on the fire till the water boils. The army model holds one quart, and weighs 11 ounces. It can be bought from some outfitters, either with or without an aluminum cup that fits over the bottom. It is rigged to carry on the belt, where it will not flop nor pound the wearer. To draw it from its cover, turn two little thumb-screw fasteners half a turn, and you can whisk it out almost as easily as you would a pistol.

Aluminum is not fit to carry liquor in; but, for that matter, neither is tin. One of my old partners and I, on a voyage to the Arkansas swamps, once hit upon what we conceived to be a brilliant scheme for transporting a gallon of whiskey inconspicuously in our John-boat. (You know whiskey warms the hearts of otherwise disobliging natives—yes indeedy). We got a new kerosene can, had a tinner remove the spout and solder a patch of tin over it; then in went Old Taylor. We didn't open that can for a week (hadn't seen any natives). Then along came the dickens of a cold rain, and, when it ceased, we declared an "emergency." Well, what do you think? That whiskey had turned as black as ink. *Potztausend himmel donnerwetter!* or words to that effect. If anybody doubts that we didn't open that stuff for a week, I refer him to S. D. Barnes, captain of said John-boat, of which I was crew.

In mountaineering it often happens that one plans

to camp on or near the summit, and wants to carry water with him from some head spring, to save a long climb down after it. A large canteen would be cumbersome. A half-gallon rubber water-bottle solves the problem. It weighs less than a pound, and takes up little room in the pack. In cold weather, such a bottle, filled with hot water, may save packing the weight and bulk of an extra blanket.