

for a man, and some have suggested even less for girls than Atwater did. One investigator, for instance, who allowed slightly more than Atwater did for boys of 13, thought that a standard 8 per cent below his was adequate for girls of the same age.

Early Conclusions Now Questioned

Not much study was made of children's diets before 1920. In the standards proposed before that time, however, the results of such studies as were made were included, and because they confirmed the general assumption that children should need less food than a man, and that girls should eat less food than boys, the investigators may have given them more weight than they deserved. Since 1920 a number of more or less extensive studies have been made of the food that healthy, active children eat, and these bring out the fact that at certain times they may need more food than a man. Two scales have therefore been proposed in which adolescent boys are allowed considerably more food than is thought to be necessary for a moderately active man. Another interesting point shown by these studies is that up to the age of 13 healthy, active girls eat practically the same amount of food as boys.

The fact that a normal, active child needs relatively a large food supply should be recognized by those who have charge of child feeding. The best method of handling such a problem is to assign certain foods which must be eaten, such as milk, eggs, vegetables, and fruits, or any made dishes in which these foods predominate. If a child eats his assignment of such foods without any fuss he should ordinarily be permitted to eat with his meals such energy-yielding foods as he desires. These would include bread, butter, and sweets of all kinds. But these should never be allowed to take the place of certain essential foods. If, on such a regimen, the child becomes overweight, it is probably due to an insufficient amount of exercise, and he should be encouraged to play out in the sunshine more actively.

EDITH HAWLEY.

FOOTWEAR Made Water Repellent by Various Modes of Treatment On many occasions waterproof, or, rather, water-repellent shoes and boots are desirable, not only for the comfort of the wearer and the protection of his health, but also for the protection of his footwear.

Leather shoes and boots may be easily damaged, even ruined, if worn when wet. Wet leather is soft and readily stretches out of shape. Stitches cut through it, and it wears away rapidly.

Wet shoes and boots dried carelessly and too fast shrink and become stiff. Wet leather is injured more easily by overheating than dry leather. If it becomes hotter than the hand can bear, it is almost sure to be ruined. Many persons unwittingly spoil their shoes and boots by placing them when wet against hot stoves, hot radiators, hot steam pipes, or even in hot ovens. (Fig. 93.)

Wash the mud and dirt off wet shoes or boots. If for work or rough use, it is then best to oil or grease them with one of the preparations mentioned later. Straighten the uppers and stuff the shoes or boots with crumpled paper to help keep their shape and to hasten drying. Finally, let them dry slowly in a place that is not too warm.

The rational use of suitable oils or greases will make shoes wear longer. Shoes worn on farms, in forests, and in mines are improved by oil or grease whenever the leather begins to harden or dry. Among the best materials for this purpose are neat's-foot, cod, and castor oils, tallow and wool grease, or mixtures of these materials.



Fig. 93.—Middle sole "burnt" when wet. The burnt leather is brittle and crumbly and falls out in pieces

To apply, first brush off all dust and dirt and then warm the shoes or boots carefully, keeping in mind the danger of burning them if they are wet. Apply the warm, but not hot, oil or grease with a wad of wool or flannel and rub it well into the leather, preferably with the palm of the hand. Be sure to work the grease in well where the sole and upper join, as water soaks through there most often. Let the oiled or greased shoes dry in a warm, but not hot, place.

How to Make Shoes Waterproof

Treating shoes and boots as just mentioned will help them to turn water, but will not make them waterproof, even in the usual sense of the word. For waterproofing, the following simple formulas and procedure have been found satisfactory:

<i>Formula 1</i>		<i>Formula 3</i>	
Neutral wool grease.....	ounces... 8	Petrolatum.....	ounces... 8
Dark petrolatum.....	do... 4	Paraffin wax.....	do... 4
Paraffin wax.....	do... 4	Wool grease.....	do... 4
		Crude turpentine gum (gum thus).....	ounces... 2
<i>Formula 2</i>		<i>Formula 4</i>	
Petrolatum.....	ounces... 16	Tallow.....	ounces... 12
Beeswax.....	do... 2	Cod oil.....	do... 4

Melt together the ingredients and mix thoroughly. Apply the warm but not hot mixture to all outside parts of the shoes or boots.

If they are for summer wear, apply only as much as the leather will take up without leaving a greasy surface. If for winter wear, an excess will do no harm. Grease thoroughly the welt and the edge of the sole. Saturate the sole with the water-proofing mixture. This can be done conveniently by setting the shoes in a shallow pan in which



Fig. 94.—Waterproofing the sole of a rubber-heeled shoe

is enough of the melted mixture to cover the entire sole. Rubber heels should not be put in the grease, as it softens them. To waterproof the soles of shoes with rubber heels, use a pie pan and set the shoes astraddle the rim of the pan with the heels outside. (Fig. 94.)

Less Protective than Rubber

One should not expect to be able to waterproof leather footwear so that it will be the equal of rubber boots or overshoes for prolonged wear in water or slushy snow; yet substantial, properly made leather shoes and boots can be waterproofed with the preparations mentioned to protect the feet satisfactorily during stormy weather or for use on wet ground or pavements where there are no deep puddles. Waterproofed shoes and boots keep in the perspiration to a large extent. They are, however, less objectionable than rubber footwear in this respect.

Any oil or grease will darken, to some extent, the color of fair or light leathers. Furthermore, oily or greasy leather can not be polished satisfactorily.

To make street or every-day shoes fairly water resistant and yet capable of being polished, the oil or grease mixture may be carefully applied to the soles only, as with a brush, taking pains to get none of the mixture on the uppers. If lightly oiled with castor oil and left for from 12 to 24 hours, the uppers may be polished. The castor oil can be conveniently applied by means of a small wad of oiled cheesecloth, but care must be taken not to put on too much.

R. W. FREY and
H. P. HOLMAN.

FOREST Administration Policy Permits Wide Range of Private Use The somewhat generally prevalent impression that national-forest lands are rather completely withdrawn from the customary forms of private use and occupancy is incorrect. The guiding principle of national-forest administration is the one laid down by former Secretary of Agriculture James Wilson, which was: "All the resources of national forests are for use, and this use must be brought about in a thoroughly prompt and businesslike manner, under such restrictions only as will insure the permanence of these resources." Under this principle all forms of land occupancy compatible with the purposes for which the national forests were established are allowed under permit.

Special uses of national-forest land that are of a public character or of general public benefit, and those related to some major use of national-forest products, such as logging, grazing, etc., usually are granted without charge. For privileges of an exclusive nature, or for the use, benefit, or profit of an individual or company, a reasonable annual fee is required. On June 30, 1927, 33,065 separate special uses of national-forest land were in effect, of which 14,882 were without charge and 18,237 subject to the payment of reasonable annual fees. For the fiscal year 1927 the payments for special uses of national-forest land amounted to \$277,611.53.

Permit Issuing a Simple Process

The process of obtaining a permit is a simple one, and 95 per cent of the business is handled directly on the ground by the field officers of the Forest Service. Upon advice received by a forest officer, by letter or verbally, that a certain special use is desired, an examination is made to determine whether it will be the best use of the area and