

the ground at an angle to hold one pot over the fire is called a dingle stick.

There are many other choices including pit or trench fires to save fuel, rock fireplaces, platform fireplaces, or the reflector fires that you build in front of a tent.

If you are using your fire to cook with, remember the old woodsman's adage that flames are best for boiling, but coals are best for broiling. You can get flames by adding a pine knot, split kindling, or dry twigs. To get coals you must wait for the wood to burn down to coals, or you might add charred brands or charcoal from an old fire if available. Allow yourself a full hour from the time you start the fire until you start cooking.

If you want the fire to last a long time in a campfire or in the home fireplace, you can accomplish this by packing round logs rather tightly over the fire and covering partly with ashes from the fire.

Don't burn your house down or mar

your vacation with carelessness. Fire is a wonderful ally, but a dangerous enemy. Your campfire should not be built until you have cleared a 10-foot circle down to mineral soil or rock. Your roaring blaze in the home fireplace should not be left alone without a good strong fire screen to prevent sparks or brands from popping or rolling into the room.

If you desire a little novelty in your fire, at home or in the woods, you can get it by using certain chemicals to give a variety of colors. Make up water solutions and soak pine cones, split sticks, or blocks of wood in the solutions, then let them dry out for a day or so. Throw one or two on the fire when you want a color display. You can get red by using strontium nitrate, purple by using lithium chloride, blue by using copper sulfate or cobalt, orange by using salt or calcium, green by using barium, and you can color it yellow by using sodium.

Blue Mountains Water Is Liquid Gold

LEGRAND OLSON



IF YOU LIKE to get out and travel this great land of ours, the chances are that you may visit Blanding in southeastern Utah someday. I think you will like it.

Improved roads are bringing more and more vacationists every year to recreation sites on the nearby Manti-La Sal National Forest which embraces the Blue Mountains. Canyonlands National Park, Glen Canyon Dam, and Lake Powell are also in the southeast corner of Utah, and they draw visitors from all over America.

Blanding is only a way station compared with these great scenic attractions, but if you ever drive through it you will

want to feast your eyes on this small town nestled like a jewel in a setting of red sandstone and piñon pine. You may even want to stay awhile and ponder how water can be the wellspring of new life for a turn-of-the-century pioneer town.

For Blanding has just about everything that you'd want to find in a small town: Green lawns and flowers, a well-kept city park, spacious school grounds, a public



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library, and—something very important in the Southwest or anywhere else—a good supply of clear water. People here are planning for a good future.

But the picture was different a decade ago. Then you would have found water rationing, dried up lawns, and murky water—the results of a sick watershed. And people were discouraged.

They had just invested 26 years of disappointments, frustrations, and about \$440,000 in a water system. They had tunneled through a mountain to divert the water from Indian Creek to Johnson Creek. Even after this, water was still scarce and highly contaminated.

However, you might understand their predicament better if we go back to 1905 when Blanding was settled.

In this part of the arid West, settlers looked to the mountains for their water supply. Here it was the Blue Mountains, about 20 miles from Blanding, within the Manti-La Sal National Forest. An upthrust in the geologic past raised these mountains to a height of 11,300 feet above sea level. Like a green oasis they supply water through several permanent streams.

One of these streams, Johnson Creek, provided the water for Blanding.

Ten miles of canal and storage ponds were needed to get the water to the town. The need was great—the canals were dug and ponds were constructed. The water thus supplied would become warm and stale, but the hardy pioneers accepted this. The water system was later improved by the installation of a pipeline which replaced the canals. The pipeline supplied needs for a few, but as the community grew it became inadequate.

The need for more water had long been recognized. Dave Black and Walter Lyman had conceived a plan of tunneling through a mountain to divert water from Indian Creek to Johnson Creek.

There were enough people in favor of the project to start the tunneling in 1922. They hoped that gold would be found, as some gold had been mined nearby. Progress on the project was slow, and work would periodically halt due to lack of funds and public support.

There were disappointments, frustrations, and final triumph when the “gold”

was found 26 years later as the tunnel was completed. The “gold” was liquid—the water of Indian Creek. And the final thrust was made possible through a loan from a State agency—the Utah Water and Power Board.

The amount of the water available was not the only problem that faced the people of Blanding. Floods in the high mountain watershed filled up the canal and pipeline with dirt and with other debris.

The source of this trouble was easy to determine. A number of the steep slopes of the Blue Mountains, in common with many of the western public ranges, had inadequate plant cover as a result of past excessive grazing. Lacking this protective mantle of vegetation the watershed could not receive and dispose of the water, but reacted just like a “tin roof.” The water deposited on the ground rapidly ran off—eroding the exposed soil and carrying it off, some of it as far as the kitchen sink.

A need for further action was evident—even though Blanding already had invested in this household water system an average of about \$1,500 for each of the 300 families in the community.

Work With Ranger

The initial step, taken in 1948, was to form a watershed committee. This committee's members were the mayor, city councilmen, two of the livestock users of the region, and the school superintendent. Working very closely with Forest Ranger Julian Thomas, they explored every angle.

The committee recognized the desirability of removing the livestock, but to reduce a means by which some of their people made a living was a serious matter. In the end, however, the committee requested that the Forest Service eliminate grazing use from the watershed above the pipeline intake for household water, control public camping on those areas, and rehabilitate the damaged watershed. Agreement on the program was reached in 1956, and restoration work started.

Mechanical treatment of land on steep mountainous terrain is costly. Terraces or contour trenches were designed to hold and to absorb a high intensity storm of 2 inches of moisture in 2 hours. These

trenches and barren areas were reseeded to grass to hold and protect the soil. When finished, nearly \$50 per acre was invested in areas treated by trenching and seeding.

But the results were impressive. Dirty water in the pipeline is now a rare occurrence. Bacteria count is way down, and streamflow holds up much longer during the dry summer months. What was formerly a sick and eroded area is developing into attractive scenic land.

Blanding community, looking forward to growth and development in the future, has supplemented its water supply with a well, a water treatment plant, and two storage reservoirs.

Today this community has delightful public park areas, spacious school grounds, and well-kept lawns and flowers. Colorful Indians are seen on the streets, and remnants of their ancient culture are being preserved. There is adequate space, and more important, water to expand and benefit from a new resource—tourism.

Remember if you do visit Blanding that what you see is the result of people working together with the Forest Service to restore their watersheds. Their work has made better living today and will benefit the generations to come.

And lovely—and vigorous—towns like Blanding are the result.

How To Select a Christmas Tree

LESTER E. BELL



SOON IT WILL BE TIME to pick out a Christmas tree again! You are one of a vast army of people who will be selecting Christmas trees for their homes, door-yards, and businesses. Figures for recent years show that about $1\frac{1}{3}$ million families will select metal or plastic ornaments, while 33 million or more families will have natural grown trees.

What kind of tree will it be? Of course, in most cases it will be an evergreen. What species you get will depend to a large extent on where you live. Some 25 different species are used for Christmas tree purposes. In some of our larger cities, you may be able to select from as many as seven or eight species. But if your home is a ranch in the west of Wyoming and you have to select your tree locally, you may wind up settling for a lodgepole pine. Or if you are down in the back country of the southern Appalachians, a

redcedar may be your best and only choice.

What are some things to look for in selecting a tree? First of all you want a tree that has needles of a good green color. You want a symmetrical tree—one shaped like an inverted cone with four good sides so that you can either set it in front of the picture window, in the corner or on the side of the room, wherever you please and have an attractive tree. A tree ought to add fragrance to the air at Christmas-time. Branches should be pliable enough so they won't break easily, and yet not be heavy, coarse, and thick. You want a tree that holds its needles from the time you bring it into the house until you take it out. This usually is a matter of 1 to



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