Keeping Warm

1st in the "History of our Homes" Series

By Gregory LeFever

When European colonists first came to New England, they'd never experienced anything as cold as its winters. Familiar only with milder English winters, many froze to death and even those who tried to record winter's horrors had their inkwells freeze, as did their water, even their wine.

This 1937 photo by noted Depression-era photographer Lewis Hine shows a woman gathering coal in Scott's Run, West Virginia.

They tried valiantly to heat their homes, but most managed to barely dent the chill for six or seven months of each year, at least in the northern colonies. Hard to believe as it may be, these hardy American settlers and their offspring ate, slept, and worked through more than a hundred harsh winters.

Not until the early 1800s did innovative cast-iron stoves begin replacing the smoky, wood-devouring fireplaces. Smaller and much more efficient, freestanding stoves could distribute warmth throughout the home and provide a far more desirable method of cooking.

In fact, the iron cookstove has been considered the first major home appliance in American history.

Yet it would be another hundred years or so – bringing us into the 20th century – before home-heating technology became so advanced that families could finally escape the seasonal cycles of heat and cold that had ruled the lives of many Americans for so long.

Centuries of Improvement

Looking back, the history of heating American homes is a study in contrasts.

There's the difference in physical labor, from months spent gathering firewood each year to today having heat available at the flick of a switch.

There's the difference in the quality of heating, from extremes of hot and cold in a single room to a controlled distribution of comfortable heat throughout the home.

Then there's the reduction in danger, from the era of terrible house fires, bodily injury and even death to today's considerably safer sources of household warmth.

This farm wife in a man's U.S. Navy uniform shirt stirs a pot on her makeshift cookstove. Sitting on metal cans with a stash of firewood next to it, the stove likely provided all of the heat for the house.

But one thing that's remained constant is women's role as the tender of fires. When wood was the main fuel, men and boys were responsible for felling trees, chopping them into logs, and hauling logs to the home. Women took over from there – chopping the wood into smaller pieces, carrying them to the fireplace, tending the fires, and cleaning out the constant piles of ash.

Women's work related to heating the home with wood was grueling and endless during the winter months. Even the transition to stoves and coal as the preferred fuel did not lighten the load for women, who had to wait until the 20th century for any real relief.

Primitive Hearths

Early settlers in the northern colonies built small, primitive houses and piled stones against interior walls to form crude fireplaces. These simple hearths were connected to chimneys so inefficient they burned massive amounts of wood while sucking most of the heat out of the house and creating billows of smoke.

Only later did colonists turn to fieldstone, brick, or hardened clay to construct fireplaces with hearths deep and wide enough to provide heat for cooking and comfort. On average, a colonial household consumed about forty cords of wood – amounting to one acre of woodland – each year.

For cooking, they'd build large fires and move the coals into separate piles for heating cauldrons of soup or stew, toasting vegetables, and roasting meats. Women stepped into the deep hearths to adjust pots and pans and redistribute coals, sometimes accidently exposing their long dresses to the embers. Fire associated with the hearth was a leading cause of women's death in early America.

As for heating the home, roaring hearth fires kept a "great room" warm in the area close to the fireplace but not much beyond. Though some larger homes had fireplaces in several rooms, the typical colonial home remained so frigid in the dead of winter that families didn't stray far from the main hearth, day or night, sometimes for months on end.

Introducing the Stove

Problems with traditional hearths prompted Philadelphia's Benjamin Franklin to put his genius to work, and in 1742 he introduced the "Franklin Stove." It was basically a metal-lined fireplace featuring an innovative baffle and flue for circulating and heating air.

The true heating revolution, however, arrived in the early 1800s with something quite different – the cast-iron stove. In its various forms, a stove stands away from the walls and gives off heat on all sides. Due to its interior design, a stove provides better combustion and uses less fuel. Plus, the stove channels the smoke through stovepipes instead of allowing it to pour into the room when chimneys fail to function properly.

Most stove models were made in small foundries and sold locally. They ranged from utilitarian plain boxes to potbellied models and then parlor stoves with ornate ironwork and decorative finials. Due to their smaller size, stoves could be installed in different rooms to heat much more of the home with less mess.

This 1938 U.S. Farm Security Administration photo was taken during the summer of 1938 in Circleville, Ohio. The stoves offered for sale show the variety of sizes and shapes still in use in the early 20th century.

Meal preparation also improved dramatically with the cast-iron cookstove. Food could be cooked on the stove itself, eliminating the need to step and stoop among fireplace coals.

But like the larger hearths, the stoves were not without their dangers, especially when adults or children ac-

Here a nurse named Mary Lennard from the Red Cross clinic in Taos, New Mexico, explains to this family how to operate their large cookstove, which was probably the main appliance in the home in Questa. Government photographer John Collier took the photo in 1943.

cidently leaned or brushed against the hot iron, scorching clothing or worse.

Turning to Coal

Fireplaces were a huge drain on wood supplies. As early as the 1600s, cities such as Boston and New York experienced severe wood shortages, and most towns regulated the sale of firewood during the 1700s.

Switching from a fireplace to a stove that burned wood was far more efficient than a wood-guzzling fireplace, but another big improvement in home heating occurred with the discovery in the late 1700s of coal in Virginia.

Soon a number of underground mines were operating in the Appalachian basin, aided by a growing network of railroads and riverboats capable of hauling the coal to population centers. By 1840 there were 7,000 coal miners in America, jumping to more than 180,000 by the end of the century, as coal mining grew to be a major American industry.

Even families who still relied on their fireplaces for cooking and warmth were able to switch from wood to coal by using grates to hold the chunks of the hard, black fuel. An average home in a northern state would consume about four tons of coal in a winter.

Coal became the preferred fuel for heating in the years after the Civil War, surpassing the consumption of wood in 1885. Wealthy families installed furnaces in their basements, with adjacent bins for storing the coal, while middle and lower-income families remained with stoves and fireplaces burning either coal or wood.

Making Heat Central

Entering the 20th century, home heating improved dramatically. Up to the early 1900s most homes used stoves in several rooms to provide warmth, though most bedrooms remained unheated. But with the turn of the century, more homes adopted “central heating.” This is where the heat is created in a single furnace or boiler and distributed through the home using ductwork or pipes.

Sears in 1908 began offering coal-fired furnaces for central heating in the company's popular home-appliance catalog. It was in 1919, however, that the first patent was issued for a central heating system. Alice Parker, an African-American inventor from New Jersey, designed the gas-fired furnace that revolutionized how people heated their homes.

Steam and hot-water central heating both were popular with wealthy families around the turn of the century. These were expensive types of heating to install and maintain until the 1890s when the new American Radiator Company began making economical cast-iron radiators that brought the cost of these water-based systems within reach of more families.

By 1940 over half of all American homes were heating with coal, with another quarter still relying on wood. In a few short years, with the big boom in home building after World War II, coal faded in popularity, as did fuel oil beginning around 1960.

During the later 20th century, various fuel sources were adopted in different types of homes in different regions. Fuel-oil usage has been widespread but is subject to wide price fluctuations, depending on oil availability. Natural gas also has been popular in parts of the country, as is propane. In areas of low-cost electric power, furnaces using electricity have proved popular and economical.

Woodpiles and Money

Ironically, it was the expanding use of air-conditioning in the 1950s that prompted more home construction in the South and warmer parts of the West, a trend that promoted a more even distribution of housing across the country. The shift also further diminished the use of coal and fuel-oil as heat sources.

Electricity and natural-gas have steadily increased as heat sources since the mid 20th century. Common forms include the standard forced-air furnace, radiant and convection heaters, space heaters, and heat pumps, among others.

Today the U.S. Energy Information Administration reports that 47 percent of households use natural gas as their main heating fuel, compared to 36 percent using electricity. Natural gas furnaces dominate across America except in the warm Southeast, where there's less need for heating and where electric heaters are used when necessary.

Across the country, about four percent of homes use no heating equipment at all, the highest region being the Southwest where 15 percent have no need of home heating.

Looking across the history of home heating in America, one big paradox stands out.

In the days of wood and coal, keeping the home fires burning was a function of having fuel stockpiled nearby. With today's natural gas and electrical heat, the ability to heat our homes depends on our bank accounts to keep the gas or electric company paid.

And if there's ever an interruption in our gas or electric service, for whatever reason, there's no logs or hunks of coal to grab. We're stuck, and in just a few wintery hours, our homes can become as cold as a colonial hovel until we're able once again to flick the switch for heat.