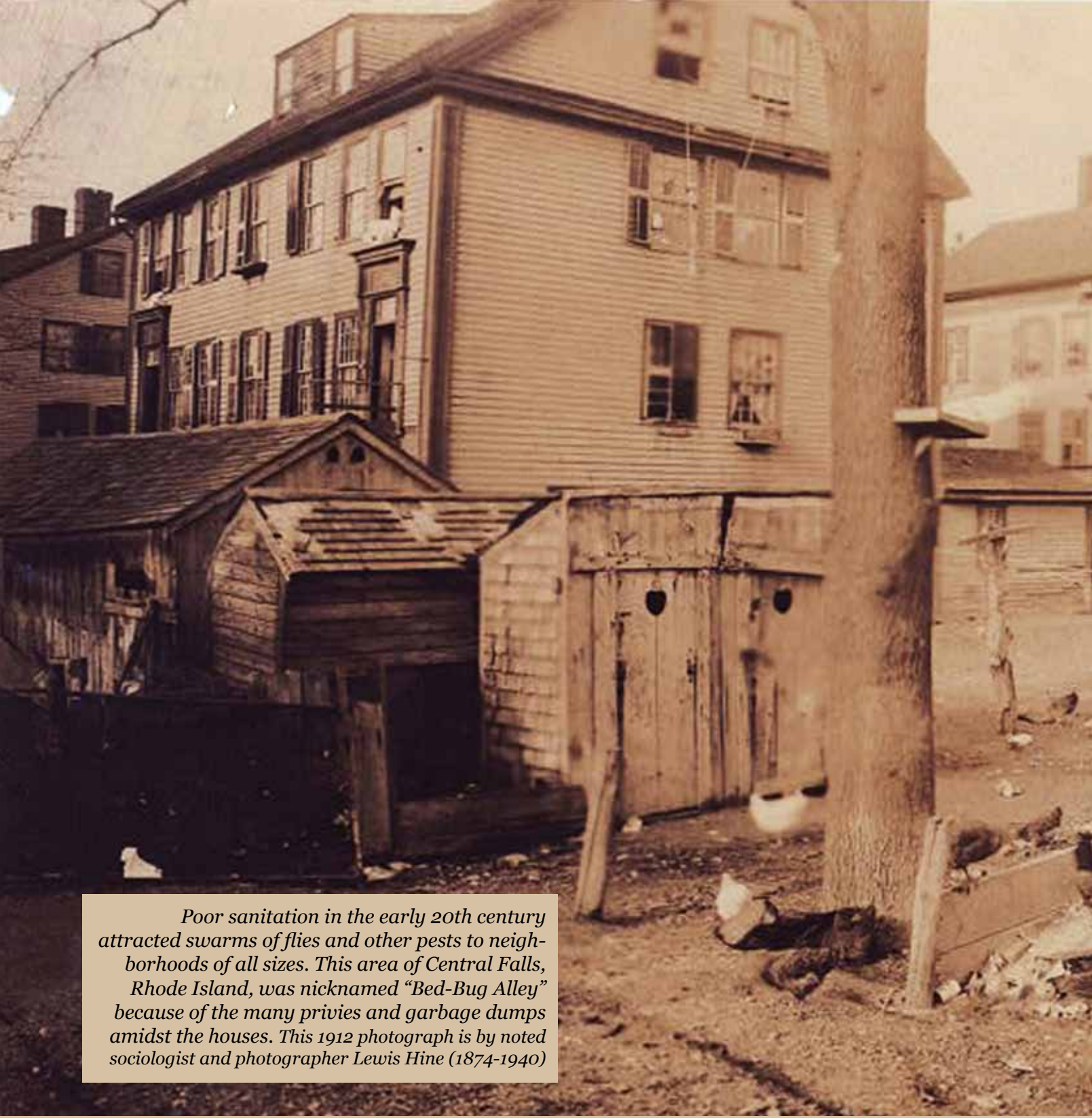


Poor sanitation in the early 20th century attracted swarms of flies and other pests to neighborhoods of all sizes. This area of Central Falls, Rhode Island, was nicknamed "Bed-Bug Alley" because of the many privies and garbage dumps amidst the houses. This 1912 photograph is by noted sociologist and photographer Lewis Hine (1874-1940)

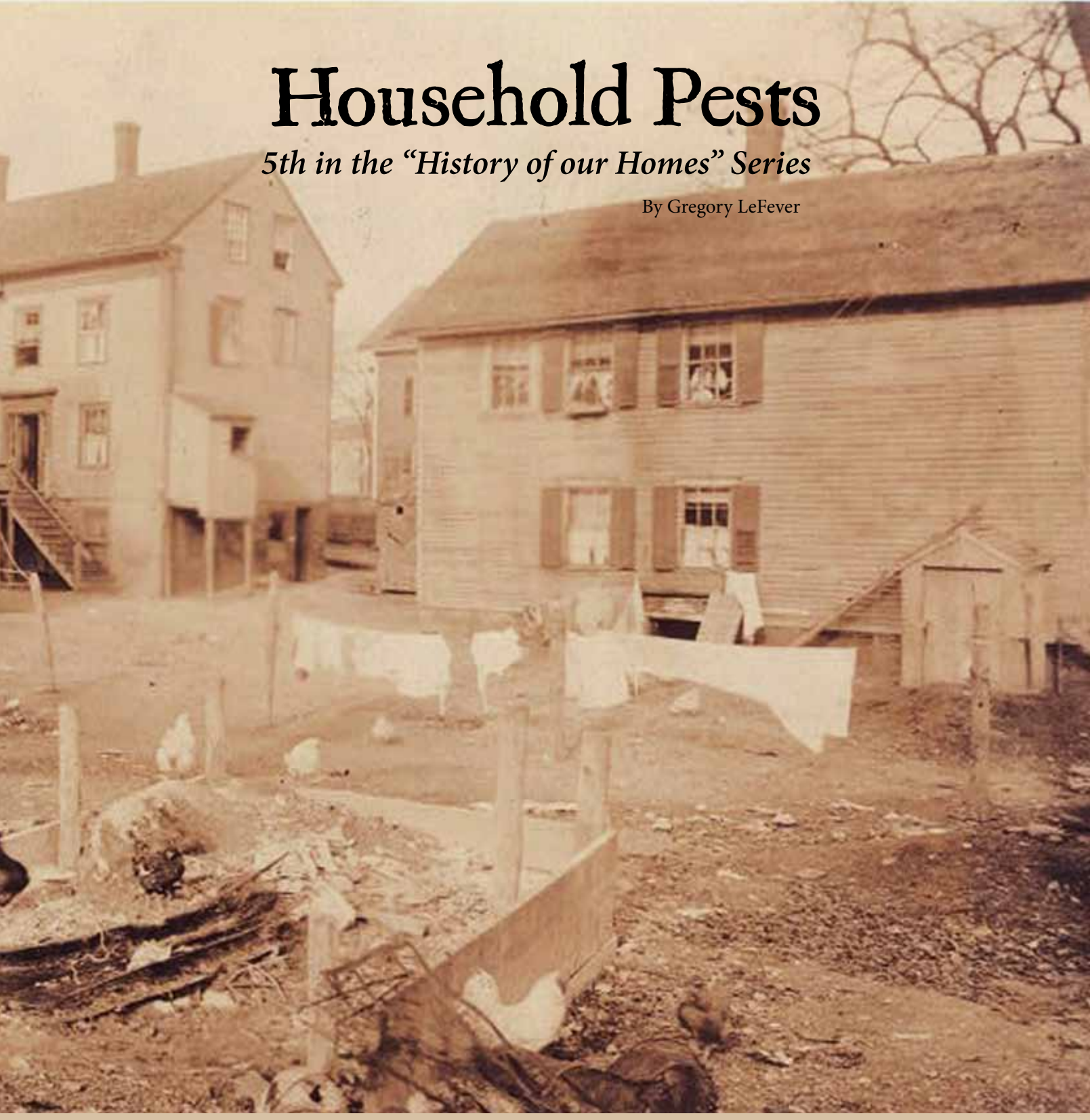
For as long as people have created shelters, the idea has been to separate us from nature. We want our roofs, walls, and floors to protect us from bad weather and from creatures great and small.

But for as long as people have created shelters, we've shared them unwillingly with pests that bite and sting us, eat our food and clothing, give us diseases, and engage us in difficult battles over who's going to live in the shelter and who isn't.

Household Pests

5th in the "History of our Homes" Series

By Gregory LeFever



Our long war against pests has not been limited to just us two-legged creatures against those with four, six, or eight legs. At times it's turned neighbor against neighbor, rich against poor, and the users of powerful poisons against those who fear for the health of loved ones.

And it's been a war where sides are not clearly drawn. Bugs in our homes are an enemy, while some bugs in farmers' fields are necessary. These are the bugs pollinating crops and—like the ladybug and praying mantis—even wage their own battles against their destructive

cousins. Sometimes innocent bystanders get caught in the war, as when millions of honeybees fall victim to careless use of pesticides.

Over the course of nearly four centuries, Americans have managed to grow farther and farther from nature's discomforts. Our homes have become enclosed sanctuaries reliant on automated heating and cooling, providing treated water and filtered air, plus offering an arsenal of pesticides helping us control multitudes of creepy-crawlers.

And yet, it's been a war without a winner.

Try as we might, we rarely eradicate pests permanently, several of them having been around for millions of years. Cockroaches may drive us mad, but they can withstand extreme temperatures and can go months without food. Bed-bugs are stealthy and nearly indestructible, with infestations going back to the first colonists in 1600s, subsiding for a couple centuries, and now once again attacking us in epidemic proportions.

And in a final irony, growing numbers of pests—ones we've eradicated time and again with powerful pesticides—are becoming genetically resistant to them, rendering these poisons nearly useless.

Pests and Penance

By the time groups of English folk decided in the 1600s to cross the sea to settle in Virginia and New England, the relationship between people and bugs already had gone through a big change. From medieval times and lasting several centuries, Europeans believed God sent fleas, roaches, flies, wasps, and other pests as punishment for sinful deeds.

It was people's fate to suffer the bites and stings as a form of penance.

Then, somewhere around the 1500s—after several deadly plagues and epidemics had ravaged Europe's population—the tables turned. Renaissance thinkers convinced people that instead of suffering, it was now their duty to get rid of pests as part of creating a more pleasing environment on God's earth.

The challenge became how to destroy the flying and crawling pests with the few natural poisons available in the European countryside.

That's when alchemists developed the first chemical pesticides, using arsenic, mercury, and lead, while herbalists brewed plant concoctions, designed to poison or repel pests. Rudimentary insect traps were invented, resembling miniature versions of the traps used for catching

A farmer and his farmhand shovel poison to a makeshift "cricket trap"in Big Horn County, Montana. This 1939 photo was by U.S. Farm Security Administration photographer Arthur Rothstein, who chronicled the plight of farmers trying to keep swarms of crickets and grasshoppers from devouring their crops and invading their homes on the Great Plains.

vermin during the plague years. For personal protection, wealthy Europeans wore necklaces adorned with tiny traps made of punched-metal cylinders containing pieces of cloth soaked in blood or honey to lure and capture fleas crawling on their bodies.

While the war against bugs was being waged across Europe, the people planning to colonize the New World figured they'd probably encounter familiar pests on the other side of the Atlantic.

They had no idea what was in store for them.

Swarms of 'Muskeetos'

Whether new colonists landed in 1607 on Virginia's swampy coast or in 1620 on the rocky shores of Massachusetts Bay, they encountered a wilderness brimming with millions of bugs, slithering reptiles, and hundreds of species of wild animals.

Inadvertently, the first colonists also brought with them some of Europe's most noxious vermin as stowaways on their wooden ships.

Native Americans who met the colonists blamed them for bringing bed-bugs and other nuisances never before seen in their tribal villages. "We have it from the Indians also that the common domestic fly is not originally of America, but came with the whites from Europe," Thomas Jefferson wrote.

As for the Indians themselves, Plimoth Governor William Bradford of Massachusetts wrote that the natives lived unperturbed "by lice & fleas indoors, and muskeetos without." Though

the Indians' attitude toward insects may have differed sharply from that of the European transplants, most historians agree that if it weren't for the protection of peaceful Indian tribes, most early colonists would not have lasted more than a year or two in the wilds.

In their new homeland, colonists confronted swarms of native pests the likes of which had not been seen in Europe for a century or more. In Jamestown, Captain John Smith—who was blamed for introducing bed-bugs to Virginia—complained about the annoying swarms of "muskeetas," as well as a creature he called the "cacarootch," a term that evolved over the next hundred years to be "cockroach."

Up in Massachusetts, Governor Bradford likewise warned his cohorts back in London of "the biting of the muskeeto" and urged that any Englander who could not cope with swarms of these blood-sucking insects should just remain home.

With scant resources, colonists experimented with their own primitive concoctions to repel bugs. They burned dishes of charcoal mixed with pinches of brimstone powder to ward off mites. They smeared cow dung on boards and fence posts to draw flies and gnats away from human habitats. They chopped up poisonous toadstools and soaked them overnight in milk to entice and kill hungry flies.

They were willing to try almost anything to drive away the pests threatening to overwhelm them.

Making War on Pests

Despite the hardships of those early years, the makeshift hovels that once dotted the early American landscape evolved throughout the 1800s into dwellings far more capable of protecting people against weather and pests. Home construction became sturdier. Glass-paned windows discouraged insect and animal intruders.

Famed photographer Dorothea Lange captured this shot of elderly Oklahoma farmers filling sacks with mixed grasshopper bait for fending off swarms of grasshoppers that were consuming their crops and invading their houses and barns in the summer of 1937.

Invention of the iron cookstove eliminated the piles of ashes and plumes of noxious smoke generated by giant fireplaces. Wells replaced streams as water sources, and, in several cities, public waterworks were installed. City dwellings became more metropolitan, rural homesteads became more comfortable.

With houses better enclosed, people gained an upper hand in controlling pests. The steady flow of insects into the home from outside was curtailed, so people were mostly left to contend with minor infestations, such as houseflies, and occasional colonies of ants, roaches, and bed-bugs.

The war against pests became more manageable as part of general housekeeping. Women put freshly baked foods into "pie safes," with doors featuring tin panels with tiny holes punched in fanciful designs to let air circulate around the food while keeping flies and other critters away. They dipped cambric cloth into saffron tea and then draped these covers over mirrors, gilt picture frames, and chandeliers to protect them from black "fly spots."

Simple cotton slipcovers in reds, greens, and pinks adorned chairs, sofas, and daybeds to discourage flea and lice infestations. Fabrics with open weaves became known as "bug bars" because it was difficult for insects to pass through them though air still could circulate, making them ideal for covering windows and keeping moths and mosquitoes away from beds.

Families fought pests with additional homegrown remedies such as bay leaves, bayberry, and pennyroyal to repel fleas, mosquitos, and palmetto bugs. They drizzled tobacco juice mixed with water onto floorboards and sprinkled cayenne pepper in butteries and storerooms to drive out ants and cockroaches—anything to discourage bugs from creating their own colonies in people's homes.

Bigger Challenges

Success in battling pests depends on the nature of the battlefield. Among the most difficult places to fight them are where dirt and foulness prevail, such as rural areas, impoverished neighborhoods, and slums.

Cities through much of the 1800s were great breeding grounds for all sorts of pests. Stinking outdoor privies stood close to most dwellings, sewage ran freely in the streets, and horse droppings were everywhere.

The situation was especially difficult in poorer neighborhoods and crowded tenements where large and frequent infestations occurred. When it came to removing roaches, rodents, bed-bugs and similar pests, any effective effort to eradicate them often was hampered by inconsistency—some families were diligent in attempting to eradicate pests, while adjacent families were lax to the extent that nests of pests routinely overran all the dwellings in the vicinity.

Grasshoppers for millennia have been a plague both inside and outside of people's homes. This U.S. Farm Security Administration photo shows a bunch of them clinging to the side of a barn in Richland County, Montana, during a swarm in June of 1939.

Likewise, life in the countryside presented its own big problems.

Farm dwellings typically were inundated with flying

and crawling pests due to the proximity of livestock, manure, stored crops and animal feed, and unclean outbuildings. Dirt and dung were never far from farmhouse occupants. In fact, in earlier times in parts of the country where winters brought sub-zero temperatures, farm families were known to bring livestock into the home to be kept warm at the hearth, alongside members of the family, for weeks on end.

Draping fabric around a bed to shield sleepers from insects created a so-called "Bug Bar," a name going back to colonial America. In this 1938 photo, an elderly Cajun woman tucks the fabric under a corner of the mattress in her home near Crowley, Louisiana. The photo is by Depression-era photographer Russell Lee.

On many farms—and America throughout the 1800s was mostly small, family farms—the annual "spring cleaning" rite involved several days of boiling water and deep scrubbing to rid the home of vermin before the arrival of new hordes of warm-weather pests.

Stigma of Infestation

The fact that household pests thrive in filthy environments has produced an unfortunate social stigma that's lasted from colonial days till now.

After a rough first century, Americans adopted more of Europe's social customs, including the desire for greater cleanliness in the home, which became linked to social standing. Wealthy colonists had bathing facilities, clean clothing, and paid more attention to reducing the pest population in their homes. At the other end of the social scale, rural dwellers, wanderers, hired hands, and other poorer folk constantly battled lice, bed-bugs, roaches, and other vermin associated with housekeeping negligence.

In communities large and small, wealthy families attacked poorer families whose environments were less sanitary, blaming them for neighborhood pest infestations.

For example, the stigma associated with pests is evident with bed-bug infestations. The amount of work and costs associated with removing bed-bugs has made it difficult for poor families to eradicate them. A wealthier family might be more diligent toward cleanliness or might hire an exterminator well-armed with pesticides. But bed-bugs are tough and transient and can be carried from place to place with unsuspecting ease. This means a wealthy family suddenly finding bed-bugs in their home often blamed servants, workers, or even neighbors who might be more relaxed in their housekeeping.

This condemning and blaming continues today, as can be witnessed by the accusations accompanying an outbreak of bed-bugs in the home or head lice among school children—the less fortunate quickly feel shame and the fear of being shunned.

Powerful Poisons

America's entire war against household pests took a dramatic turn in the early 20th century

when medical researchers discovered that pests such as mosquitos, fleas, lice, and bed-bugs were causing outbreaks of yellow fever, malaria, typhus, sleeping sickness and other potentially deadly illnesses.

Retaliation was swift and mighty. During the period when America was fighting World War II, scientists were focused on development of new armaments, culminating in the atomic bomb. At the same time, learning of the increased danger coming from pests, a number of highly toxic chemical pesticides were introduced, surpassing any bug poisons known to man.

These included poisons with strange names such as DDT, chlordane, lindane, aldrin, endrine, and several others. DDT became available to the public in 1945 and was the most widely used of the new pesticides. Older folks today may remember as children seeing clouds of DDT being sprayed around their homes from trucks and crop-dusting planes, with Americans unaware of the dangers the pesticides themselves were posing.

Repercussions of such heavy use of pesticides—both inside the home and outside—was revealed in Rachel Carson's 1962 book Silent Spring, which exposed the dangers of many pesticides to people, animals, and plants. Poisons such as DDT have cumulative dangerous effects when used repeatedly, creating a range of serious illnesses and neurological disorders, especially in children.

As a result of these alarming findings, the US government banned DDT in 1972, while chlordane, lindane, and endrin were outlawed in the US as pesticides beginning in the 1980s. Much of the pressure to ban the pesticides came from newly organized environmental-protection groups.

A lesson learned, Americans now turned to safer pesticides—as well as to professional exterminators trained in the use of powerful chemical pesticides—to continue waging the war against bugs, while also protecting the health and safety of their families.

A Continuing War

Pesticide lessons of the 20th century are still influencing our war against bugs, whether in our homes, neighborhoods, school districts, or farmlands.

American families are greeting new forms of poison—clinically tested and sold with explicit warnings and instructions—with enthusiasm, along with a broader selection of non-chemical pesticides. Methods of delivering these pesticides have expanded to include aerosol cans, bug bombs, dusts, liquids, and bait stations.

Restraint is the key word in today's home pesticide use. The emphasis now is on minimizing pesticide use by applying the poisons only as needed, using the least toxic pesticide available, and confining the area of use to the specific pest problem. No more widespread spraying of large areas inside and outside the home with poisons so strong they're like the proverbial smashing of a fly with a hammer.

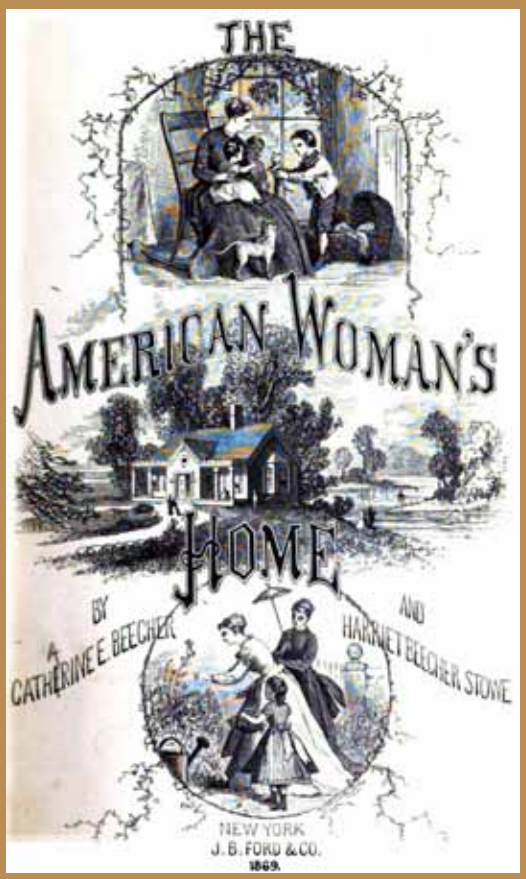
According to a study a few years back of a thousand Indiana households, the pesticides most often used in today's homes are ant and roach sprays, mosquito repellants, mildew cleaners for bathrooms, and weed killers for lawns. Aside from poisons, some 90 percent of the Indiana households also use fly swatters, and 45 percent reported using insect traps.

Families in the Indiana study reported they were pleased with the poisons and non-chemical weapons, with 70 percent saying they got rid of their pest problem.

That's the good news. The bad news is that the families said they knew their victory was temporary.

Yes, the pests likely will return to our homes. It seems like they always do. And now there's the added problem of pesticide resistance. It's the result of ongoing heavy usage of powerful pesticides such as we saw in the 20th century, where a bug's mechanism for preservation alters the genetic makeup so the bug becomes immune to specific pesticides. Today nearly 1,000 species of pests have developed resistance to pesticides.

Which means our war with household pests is far from over.



SOME OLD-TIME PEST REMEDIES

Throughout the 1800s, American families were intent on getting rid of pests in their homes. A number of books teaching people how to manage their homes became popular across America, including chapters on how to control household pests. Here are tips from two of the period's most popular domestic-management books: American Woman's Home (AWH) by Catharine Beecher and Harriet Beecher Stowe, published in 1869, and Doctor Chase's Receipt Book (DC) by Alvin W. Chase, with its third and final edition published in 1895.

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Bed-bugs should be kept away by filling every chink in the bedstead with putty and, if it be old, painting it over. Of all the mixtures for killing them, corrosive sublimate and alcohol is the surest. This is a strong poison. (AWH)

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Bed-bugs in cracked walls –Tear off the old paper and wash

the walls with pretty strong boiling-hot lye, made from wood ashes, or the concentrated lye of which soap is made. Two ounces of this would be enough for a pail of water. Put it freely to every crack, and about the base, at the floor joint, as well as next the plaster, then repaper and you're safe. (DC)

***

Cockroaches may be destroyed by pouring boiling water into their haunts, or setting a mixture of arsenic mixed with Indian meal and molasses where they are found. Chloride of lime and sweetened water will also poison them. (AWH)

***

Fleas –If a dog be infested with these insects, put him in a tub of warm soapsuds, and they will rise to the surface. Take them off and burn them. Strong perfumes around the person diminish their attacks. When caught between the fingers, plunge them in water or they will escape. (AWH)

***

Cayenne pepper will keep the buttery and storeroom free from ants and cockroaches. If a mouse makes an entrance into any part of your dwelling, saturate a rag with cayenne, in solution, and stuff it into the hole, which can then be repaired with either wood or mortar. No mouse or rat will cut that rag for the purpose of opening communication with a depot of supplies. (DC)

***

Red or Black Ants may be driven away by scalding their haunts, and putting Scotch snuff wherever they go for food. Set the legs of closets and safes in pans of water, and they cannot get at them. (AWH)

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Flies can be killed in great quantities by placing about the house vessels filled with sweetened water and cobalt. Six cents' worth of cobalt is enough for a pint of water. It is very poisonous. (AWH)

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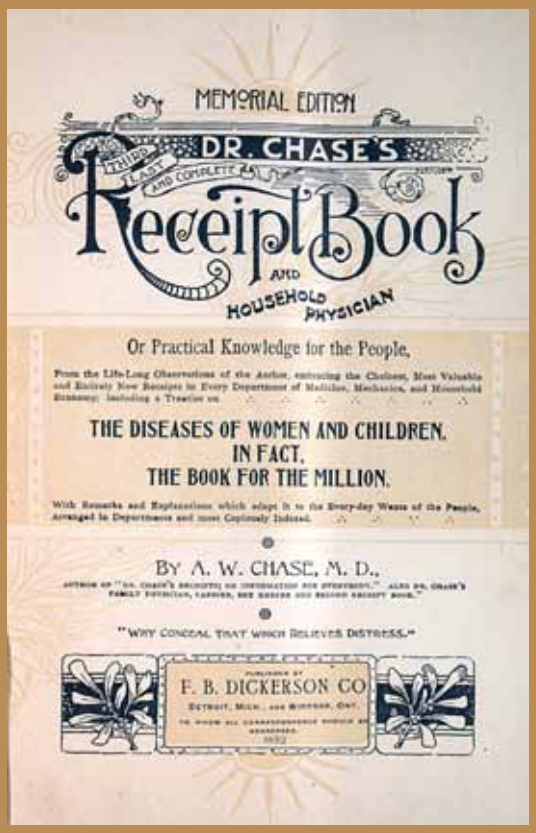

Mosquitoes –Close nets around a bed are the only sure protection at night against these insects. Spirits of hartshorn is the best antidote for their bite. Salt and water is good. (AWH)

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If mosquitoes or other bloodsuckers infest our sleeping rooms at night, we uncork a bottle of the oil of pennyroyal and these animals leave in great haste. Nor will they return so long as the room is loaded with the fumes of that aromatic herb. (DC)

***

Rats and Mice –A good cat is the best remedy for these annoyances. Equal quantities of hemlock and old cheese will poison them; but this renders the house liable to the inconvenience of a bad smell. This evil, however, may be lessened by placing a dish containing oil of vitriol poured on saltpeter where the smell is most annoying. Chloride of lime and water is also good.(AWH)

***

Moths –Airing clothes does not destroy moths, but laying them in a hot sun does. If articles be tightly sewn up in linen when laid away, and fine tobacco spread out about them, it is a sure protection. This should be done in April.(AWH)