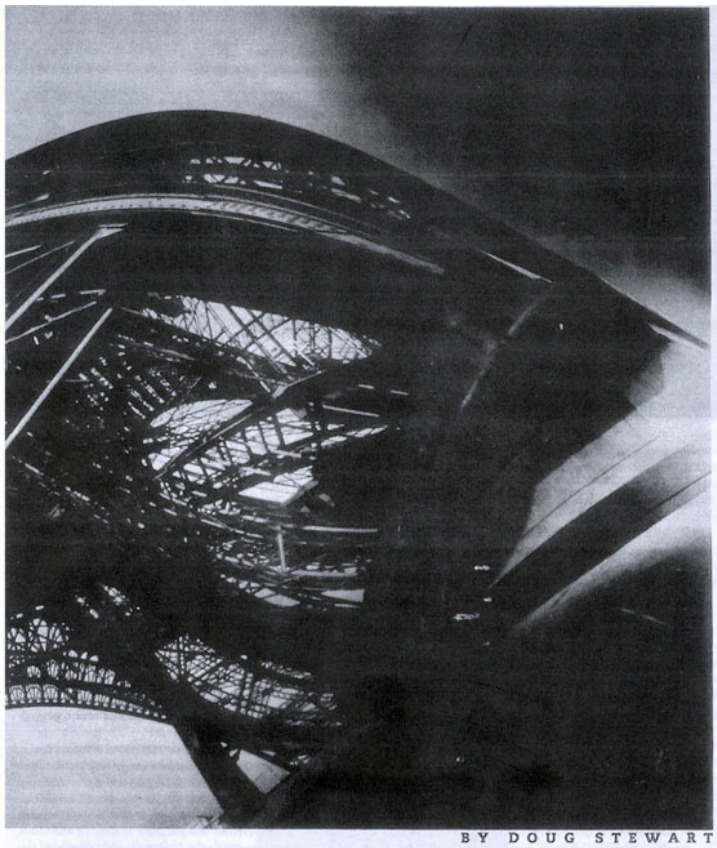
Ilan Wolff, who shoots exclusively with pinhole cameras, caught this imposing perspective of the Eiffel Tower.



The Pinhole Point of View

BY DOUG STEWART

A new generation of photographers is pushing the artistic possibilities of the simple, old-fashioned technique of taking pictures through a tiny hole in a box

SMITHSONIAN

PHOTOGRAPHER DANIEL KAZIMIERSKI USED TO TEACH AT NEW YORK UNIVERSITY, AND HE remembers with irritation how fixated his students were on fancy camera equipment. "There was lots of talk about lens resolution and other annoying stuff that had nothing to do with making pictures," he says. Motivated in equal parts by disgust and curiosity, the Polish-born photographer began using in his own work a cheap amateur camera from China. The device had a simple glass lens and a small bellows for focusing. "Then I moved to an even simpler piece of equipment, which was a little box with a pinhole in it."

Pinhole cameras are almost comically primitive. Typically homemade, they lack lenses, traditional shutters, light meters and focusing controls. Exposing a sheet of film placed inside may require 30 seconds, a couple of minutes, or all day. If you want a telephoto shot, you build a longer box. "Because there is no viewfinder, it allows you to relinquish your soul to the camera," Kazimierski says with the mystical tone common to pinhole devotees. Placing his lensless aperture an inch or two from a saltshaker or a teapot, he transforms these everyday objects into mysterious monuments. "When I develop my pictures, it's always a wonderful discovery to see what the camera saw."

Kazimierski is one of a growing number of serious art photographers who now use pinhole cameras, often swearing off lens cameras altogether. Where perhaps a half-dozen used the technique 30 years ago, today hundreds do. This low-tech groundswell has been accompanied by a flurry of exhibitions, books, courses, how-to articles, cameras to buy or build, and, of course, Websites.

"The popularity of pinhole photography among art photographers is in part a reaction against the idea that a serious photographer is someone with six cameras slung over his neck who's constantly swapping lenses," says Terence Pitts, director of the Center for Creative Photography in Tucson, Arizona. "There's a strong determination to prove that it's the artist, not the equipment, that makes the image." Besides being primitive, a pinhole camera is cheap (an important issue for many artists), and it almost guarantees an unusual result.

It's news to most people that cameras don't need lenses, but the basic principle of lensless image-making has been known for centuries. Renaissance painters sat in darkened enclosures to trace the faint, upside-down outlines of landscapes and figures as cast through a small hole. (Pinholes, like lenses, invert the images they make.) In the 1620s, astronomer Johannes Kepler built a portable version of this device for viewing the sun without staring at it directly. He called it a "camera obscura," or dark chamber.

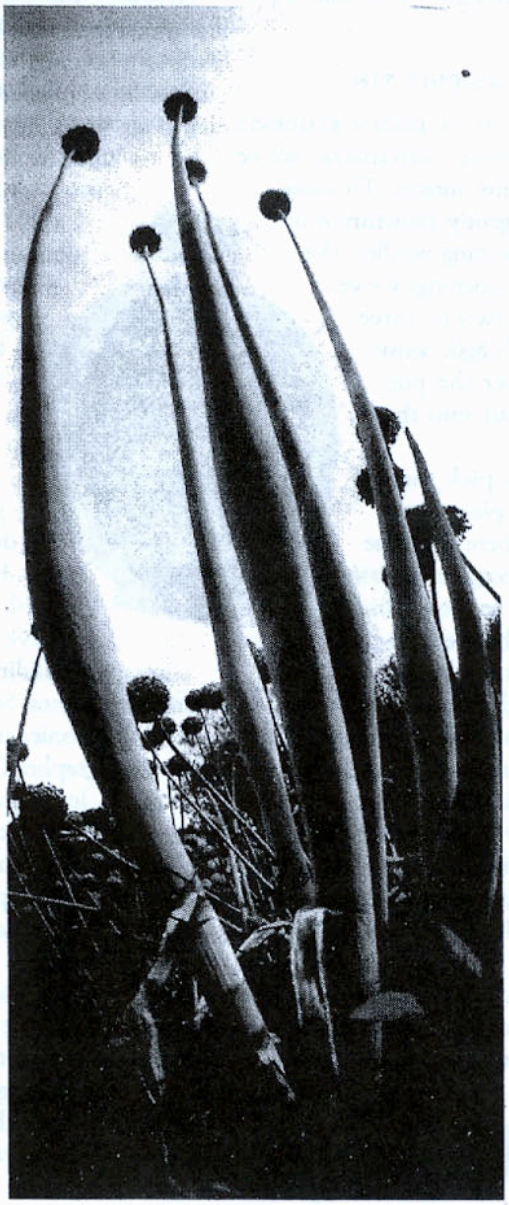
"Any room with a window open is a camera obscura," says Boston-area photographer Abelardo Morell, "but the light coming in is too unfocused to make an image. There's

too much confusion." Consider this: the daylight illuminating the wall of a room actually forms a jumble of overlapping images as light bounces off objects outside the window. The light on the wall is, in fact, an upside-down projection of the scene outside your window, just a very, very fuzzy one. Shrink the window, and you make this image sharper, but dimmer.

In addition to more conventional lens photography, Morell creates bizarre room portraits by covering all the windows in a room save for a single hole the size of an aspirin. The opening admits only a single faint cone of daylight into the darkened room. The confusion of overlapping light rays is gone. Inside this camera obscura, Morell leaves a lens camera on a tripod pointing at the far wall for eight hours with the shutter open. Of the sunlight scattered in all directions by the tip of a distant steeple, say, only those light rays that happen to head straight toward the pill-size hole gain entry to Morell's dark chamber. Inside, the pencil of light continues on and strikes a single spot on the far wall, forming the tip of a dim, inverted steeple.

In Morell's photographs, a hotel room wall in Wyoming reveals an upside-down portrait of the Grand Tetons; the distant horizon becomes trompe l'oeil wainscoting. In a Manhattan hotel room, the Empire State Building sprawls, spent, across an unmade bed. "I love the idea that images are entering your space without your intending it," Morell says in explaining his obsession.

After taking in an exhibition of Morell's photographs at Boston's Museum of Fine Arts (his one-man show comes to the Zoellner Main Gallery at Lehigh University in Bethlehem, Pennsylvania, June 21), I immediately converted my attic to a camera obscura by covering the window with a punctured sheet of cardboard and hanging bedsheets from the rafters as a screen. The neighborhood kids now gather in the attic to watch—in wide-screen full-motion color!—passing clouds, sunlight glinting from ripples on the river in the distance, and occasionally people walking around upside down in our yard. If this is too elaborate for you, jam a screwdriver into the side of a carton to make a hole and hold the box against your chest outside with a dark towel draped over your head. Since you're peering down into the carton, the image has the advantage of appearing right-side up. Watch out for neighbors.



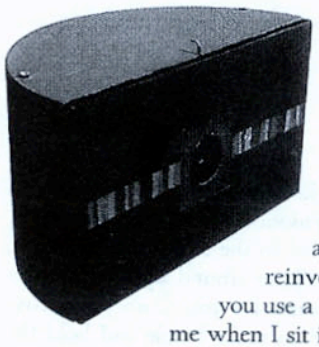
Pinhole images give a new look to familiar subjects: Thomas Harding's wide-angle view of a 101-year-old schoolhouse in Arkansas (opposite) and Wiley Sanderson's seed-stage leeks (above).

NOT A CAMERA FOR THOSE IN A HURRY

A PINHOLE CAMERA GOES A STEP further than a camera obscura. By using film, it records the projected image for posterity. Its chief drawback, of course, is that it doesn't admit very much light—several thousand times less than a lens an inch wide—so you must wait patiently as enough accumulates on the film to make a picture. On the other hand, the image stays in focus no matter how far you place the film from the aperture (though "focus" is a relative term in pinhole photography; an image projected through even a tiny pinhole is never as sharp as one focused by a decent lens).

Nearly any light-tight container can be made into a pinhole camera: an oatmeal box, a seashell, a suitcase, a hole in the ground. German photographer Thomas Bachler placed film in his mouth, then stood in front of a mirror and briefly pursed his lips to make a self-portrait. (It didn't look like much, but he deserves an A for effort.) Pinhole pioneer Eric Renner made a pickle-jar camera for underwater work. He once put a pinhole in a red pepper; the vegetable's translucent flesh acted as a natural safelight.

Renner is one of the pinhole's most influential advocates. With his wife and fellow pinholer, Nancy Dize Spencer, he publishes the thrice-yearly *Pinhole Journal*

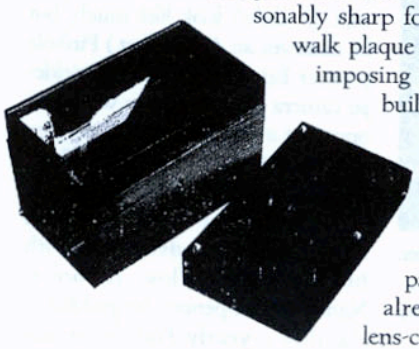


and runs the Pinhole Resource, a nonprofit archive in New Mexico. "You reinvent photography every time you use a pinhole camera," Renner tells me when I sit in on a pinhole workshop he co-teaches at the Art Institute of Chicago. To Renner, an earnest, soft-spoken man with unruly hair and rumpled clothes, pinhole is not a point-and-shoot affair but an exploration. "It's a strange way to take a picture," he concedes.

SNAPSHOTS FROM A BISCUIT TIN

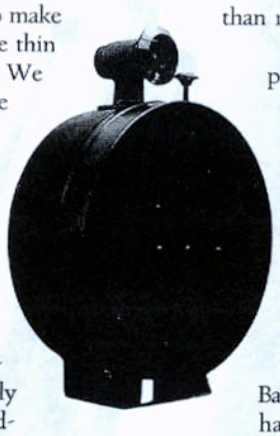
THE FIRST MORNING, I JOIN THE HALF-DOZEN STUDENTS in making cameras from various containers we've brought—cigar boxes and cookie tins, mostly. To make our apertures—the pinholes—we gently puncture thin squares of brass shim stock with sewing needles. We then tape the pierced squares over openings we've cut in our boxes. After making two or three cameras apiece, we load them with light-sensitive paper in the darkroom, cover the pinholes with black tape, and fan out into the neighboring streets and alleys.

Several of my fellow students pick their way through a weedy courtyard, placing suspicious-looking parcels here and there amid the vegetation. Around the corner, I recognize a classmate sitting alone on some steps, reading; I finally spy her camera, an eight-foot, eight-aperture cardboard tube resting in the crotch of a nearby tree, silently accumulating light. Though I'm a barely competent snapshooter myself, my dog-biscuit tin in particular yields one surprising composition after another. Because I let the photographic paper curl around inside, I watch in delight as strangely distorted wide-angle views of school buses and construction sites emerge from the developing trays. And because the pinholes on my various containers catch everything near and far in the same degree of reasonably sharp focus, a coin or a sidewalk plaque two inches away is as imposing and well-defined as a building behind it.



After class one day, I chat with Mary Tobin, one of the workshop's older and more serious participants. Tobin has already exhibited her lens-camera work in several recent shows in the Chicago area. She just ordered a new $10,000 medium-format camera with high-quality Zeiss lenses, she tells me. "It's supposed to be the new wowie-zowie camera, but I'll use it only once in a while." Overall, she prefers the pinhole. "Art should be an intuitive process. I don't want my intellect to take over and ruin things." As can happen, for instance, when immersing oneself in the details of operating a $10,000 camera.

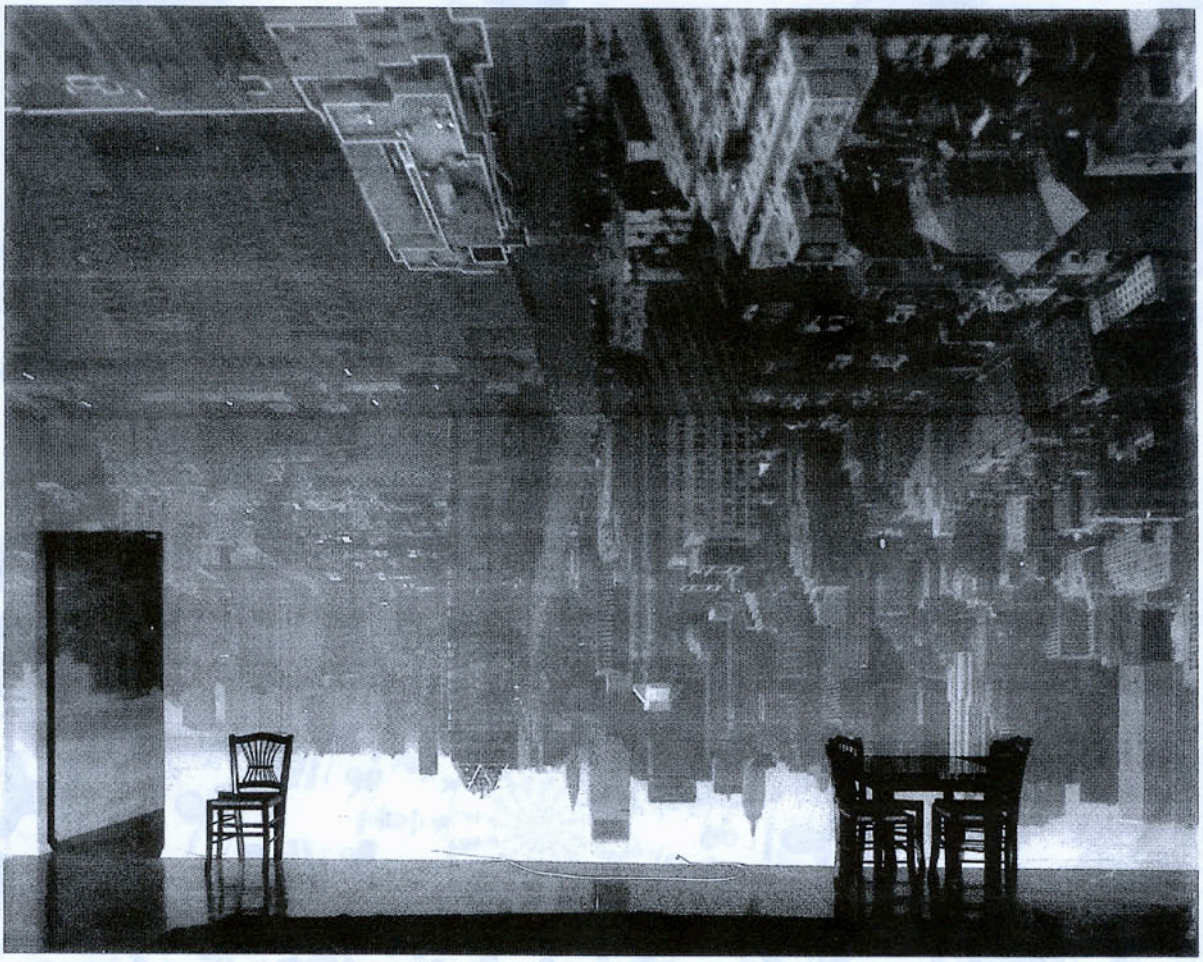
One of the art's more accomplished practitioners, Arkansas photographer Thomas Harding, fashioned his first pinhole camera in the 1970s with a toilet-paper roll and black tape. A onetime portrait photographer for Bachrach Studios in Manhattan, Harding took up the more contemplative art of "pinography," as he calls it, when he retired to Little Rock. "I guess I've built or reused more than 150 pinhole cameras by now," says Harding, still taking pictures at 88. For a series of photographs of one-room schoolhouses, he constructed a pinhole camera using two pieces of plywood and an air-release shutter. His large-format black-and-white portraits lend a stately, otherworldly grace to the often crumbling and long-forgotten structures. "Instead of everything being so hard-edged and minutely defined, it gives a softness to the image, which I think is appealing."



Harding and other pinholers, like Tom Baril, James Romeo and the late Marcia Sheer, have favored subjects that stay put—landscapes, buildings, still lifes—during their cameras' long exposure times. Some enthusiasts, however, prefer to play with the ironies of a slow camera in a fast world. Canadian photographer Dianne Bos, whose exposures are often 20 minutes long, gravitates toward much-photographed tourist spots like Mayan pyramids and Loire Valley chateaus. "A couple of hundred people may have whipped around me snapping dozens of pictures in the time I've taken one," she says. "It's made me slow down and really observe where I am." Moreover, objects in motion (like tourists) bounce so little illumination through her camera's tiny opening that they fail to appear on her film at all; in effect, they erase themselves from the picture. "When you remember visiting the Eiffel Tower or the Seine, you tend to block out all the car noises and the swarms of Americans in turquoise jogging suits. You have a soft-focus,

Wiley Sanderson, a pioneer in the revival of pinhole art, has built some 50 cameras, including (top to bottom) a cardboard panorama, a 3 1/2-inch rondo for taking round pictures and one for landscapes.

WILEY SANDERSON '91



Abelardo Morell turns a near-empty room into a camera obscura for his upside-down image of midtown Manhattan.

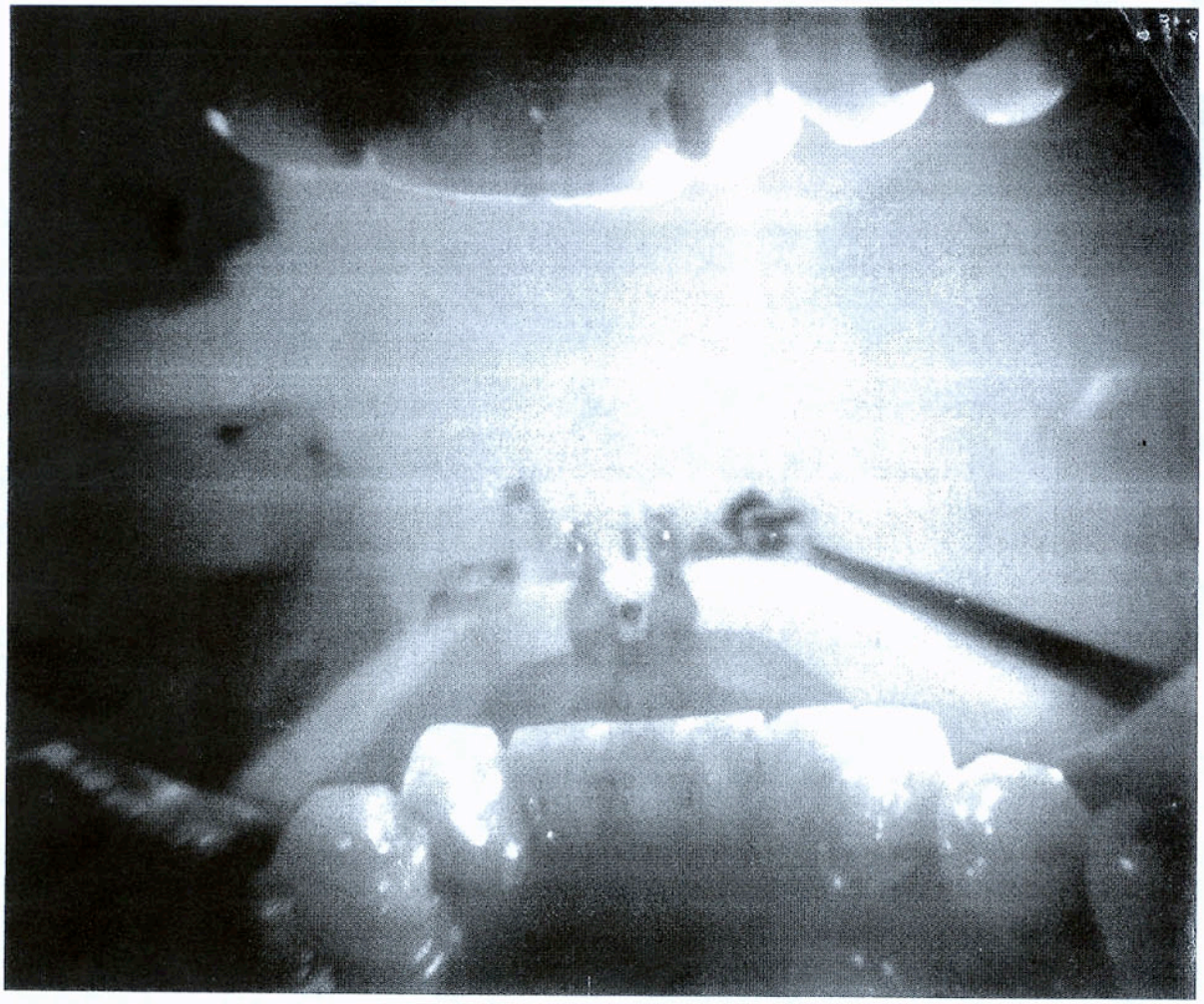
black-and-white memory of those places. So when people see a pinhole photograph with all that removed, they say, 'Wow, that's how I remember it!'"

Possibly the oldest pinhole photographs that still exist are pictures of the Egyptian pyramids and other antiquities made in the early 1880s by the English archaeologist Flinders Petrie. Like Dianne Bos, Petrie made good use of the pinhole camera's tendency to eliminate wandering humans. With a camera of his own devising made from a tin box (for reasons unknown, he used a lens in addition to a pinhole), Petrie photographed newly unearthed artifacts in a passageway leading to the camp's mess hall. The half-hour exposures he required let him ignore the parade of hungry Egyptologists passing in front of his camera. For his outdoor shots, the pinhole camera made perfect sense: the Egyptian sun was bright, and the pyramids weren't going anywhere.

For most 19th-century photographers, however, the combination of a tiny aperture and the slow-acting photographic emulsions of the day would have been excruciatingly tedious. Only with the spread of the quicker dry-plate photography in the 1880s and 1890s did the pinhole camera enjoy its first vogue. Popular manuals extolled the technique, and thousands of hobbyists bought commercial models. These included, aptly enough, the world's first disposable camera, which featured a single glass plate and a tinfoil pinhole. (Camera obscura rooms built at scenic overlooks were also a popular Victorian amusement, though many of these actually used lenses.)

FUZZINESS HAS ITS APPEAL

DESPITE THE PINHOLE CAMERA'S REPUTATION AS A NOVELTY, leading pictorial photographers around the turn of the century were intrigued by the way its output mimicked the gently blurred figures and placid, soft-focus landscapes of Impressionist paintings. George Davison stunned the art world in 1890 when his gauzy pinhole photograph *The Onion Field* won the highest honors at a major London exhibition. A bemused critic for the *Times* observed, "It is certainly a satire on the labours of the optician that after



With a film cartridge pinhole camera tucked in his mouth and his finger as a shutter, Justin Quinnell immortalizes his bath.

the resources of science have been exhausted to produce a perfect lens, the best work can be produced with no more elaborate optical instrument than a bit of sheet metal with a hole pierced in it."

"EVERY IMAGE IS A SURPRISE"

THE PINHOLE CAMERA'S CURRENT REDISCOVERY CAN BE traced to a handful of photographers, most of whom began experimenting with lensless optics in the late 1960s: Eric Renner, Willie Anne Wright, David Lebe, Wiley Sanderson, and in Europe, Gottfried Jäger and Paolo Gioli. A seminal event in the technique's revival was a do-it-yourself extravaganza at the Philadelphia Museum of Art in 1975. Conceptual artist Phillips Simkin provided more than 12,000 preloaded cardboard pinhole cameras free to visitors over the course of a month, inviting "an exchange of perceptions," then mounted a rotating display of the results.

Pinhole artists today are more apt to exploit the process's oddities than its painterly possibilities. Ilan Wolff, an Israeli-Dutch photographer living in France, has wrapped film inside the back of tilted cylindrical containers to produce weirdly distorted images of bridges, bedouins and cityscapes. "Every image is a surprise, which fascinates me," he says. Why take a picture, he asks, if you know exactly how it will turn out? Working with black-and-white photographic paper, he adds sepia tones or uses color paper to create aurora-like glows of red and orange. He recently converted a van into a rolling pinhole camera. "I have holes on both sides, on the back and on the roof," Wolff says. The roof holes he uses for poster-size portraits of buildings like the ever-photogenic Eiffel Tower. To compose his shots, he's forced to do a lot of illegal parking, he cheerfully admits. "I get many tickets, but I just add these to the price of the photographs."

For most pinhole photographers, what's rewarding is the thrill of building an image with an empty homemade box, big or small, not the result. "It's so direct and yet so magical," says printmaker-turned-pinhole-artist Sarah van Keuren, echoing the sentiment of pinhole people everywhere. "Somehow I'm just taken with it over and over again."

Doug Stewart, a regular contributor to this magazine and an amateur photographer, is converting his house into a gallery of camera obscuras, room by room.

JUSTIN QUINNELL