



that Zlotoff has in his collection. When you enter his bright basement, at Lakeview, Long Island, you see rows of shining 20th Century tools. But across the room are rows of their counterparts: curious sharp-clawed hammers, 200-year-old saws, twist-stick bucksaws used by early Yankee farmers, a small "horned" plane that may date back to medieval Europe, big jointer planes that the early colonists used upside down. (They held the planes and pushed boards over them.)

Zlotoff, a fine craftsman himself, has picked up his tools in old barns, sheds, junk yards and—of all places—antique shops. Some were gifts, but he usually pays 50 cents to \$2, sometimes \$5 or \$10.

The value of old tools, however, he says, is rising, and he has gone into business selling them.

"Did you know," he says, "that carpenters for centuries have had braces-andbits just like ours? The braces were carved from wood, the bits hand-forged."

He pulled a tool from a shelf. It looked like a hand-carved question mark. "But it still works: they all do," he said. He thrust a square-headed bit into a square hole in the brace. Then he pressed his shoulder against the revolving top-button and began to grind away. The old blade bit into a piece of pine. Zlotoff began to puff a little. "It's hard work," he said. "The bit has no screwpoint to pull it into the wood."

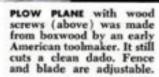
Zlotoff grows so absorbed in his old tools that he lapses into the first person. "This is the kind of auger we used when we had to drill big, deep holes for mortises and for pegging together eight-byeight and twelve-by-twelve house frames. Noah must have used augers like these to build the ark," Zlotoff says. "And I'm not kidding."

On one shelf you see a half-dozen of these spiral augers dating back to the early 1800s. Zlotoff muscled a big 3½" job from the shelf and took a few turns in a piece of hard pine. "After a few minutes of this," he says, "I always sit down and rest awhile."

Yet Zlotoff is far from feeble. A for-

## Old Tools Still Work —But Require Muscle

heavy Joiner Plane (below) is a prized item in Zlotoff's collection. It was used in colonial times for smoothing off floors, which were made from wide hand-hewn boards. The plane measures four feet from end to end.



mer artilleryman who landed in France on D Day, he's husky, with strong shoulders and arms. But he was out of breath.

"You see what I mean about those oldtimers!" he grinned.

Zlotoff first began collecting tools when, as a college student interested in shopwork, he bought a 130-year-old tool chest in Oswego, N.Y.

It was like a treasure chest. Five black walnut sliding drawers were filled with small tools: ancient levels, bits, chisels, gouges. Four saws were neatly stored in special slots.

That whetted his enthusiasm. One day in Cummington, Mass., he was rummaging through an old farm shed. Up in the rafters he saw a cobwebbed auger longer than any that he knew existed. He fished it down. It had a 12" spiral bit on a shaft nine feet long.

It was an early "pump-log" auger.

Today that long boring tool hangs in a rack in his shop, "This," says Zlotoff, taking the heavy tool from its rack, "is how we made water pipes from logs be-



THERE'S NO CHUCK on this brace and bit, which dates back to early colonial America. This style was in use in Europe more than 500 years ago. It uses a center bit rather than a spiral bit.

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UVING-ROOM DECORATIONS in Zlotoff home are antique tools, too. Here Mrs. Zlotoff tries an old "shaving horse" used for making shingles. Note the twist-stick saws on the wall.



OLD LOGGER'S CALIPERS have a sliding wooden scale that tells at a glance how many board feet are in a log. Zlotoff found them among some old tools in an eastern Massachusetts shop.

HEAVY WOODEN SEMICIRCLE is a cooper's croze, a husky plane used for cutting grooves in the inside of a barrel to hold the top and bottom on. This tool is more than 100 years old.

fore we had metal pipes. We simply drilled down the center of eight-foot logs, then attached the logs end to end."

How did they get watertight joints?

"We used a pair of planes and made male-female fittings," he says. "One plane tapered the outside of a log end into a cone shape. The other beveled the inside of the next log to receive the cone. The resulting fit was good and tight."

Since old tools were handmade and precious, practically every one was stamped, or burnt, with its owner's name.

"The old-timers' tools were good," he says. "Almost every tool that I have still works.

"Here—look at this big guy. Biggest chisel I ever saw—and wonderful steel." Zlotoff hefts a massive blade four inches across. "We called it a slick . . . OOPS!"

The beautiful old blade slipped out of its handle and Zlotoff caught it just in time. "Got to watch it," he says. "This old handmade handle has dried out, and it's loose. Friend of mine nearly cut his toe off one day when the blade fell out."

Zlotoff is still looking for special items.

One is a witchet. This is a plane that does a job you'd do on a lathe today such as rounding handles or chair rungs.

"I also want a twilbil," says Zlotoff. A twilbil is a pick-like tool used for chopping out mortises.

Zlotoff sometimes uses the old tools, but only for experimentation.

"They were wonderful," he said. "But let's not kid ourselves; they can't compare with the tools we have today." END

OLD-TIME LEVIL has no bubble, but a bob-like pointer. Screw feet adjust level to any angle. Measuring wheel (on wall) did a job that steel tapes do today. This one is two feet around.

