Niles Schulz's antique hay knives were used back in the days when hay was stored loose in the barn or in stacks.

Antique Hay Knife Collection

Retired farmer Niles Schulz, Loweville, N.Y., recently sent FARM SHOW photos of some of the big knives in his antique hay knife collection. Most were made in the 1800's and have 2 wooden handles and a long serrated blade.

Schulz, who started collecting the knives after retiring from farming in 1994, calls himself the "Hay Knife King". "At one time I had about 160 antique hay knives. Over the years I've sold some and given away others, but I still have almost 100 left."

His hay knives were used before the days of bales, when hay was stored loose in the barn or in stacks. The knife was used to cut through the loose hay so that an armful could be easily removed for feeding livestock.

"The operator used both hands to slice through the loose hay in an up-and-down motion, cutting on the down stroke," says Schulz. "These knives won't work on today's tightly wound big round and square bales. However, some small Amish dairy farmers still use these knives to slice through small square bales and open them up."

One of his oddest looking knives measures almost 4 ft. long and has 3 sickle sections welded on at the bottom and a single handle on top. The operator steps on a built-in foot rest and then works the handle up and down to cut the hay. "This knife was made after the Civil War, and designed for soldiers who came back from the war with an arm missing," says Schulz.

Another knife has teeth as small as those found on a common hand saw. "The teeth were too fine and just chopped at the hay without slicing through it at all. It was a ridiculous design," says Schulz.

One knife has a straight blade with no teeth at all. "It was one of the first hay knives made and had just a short handle and a 1 1/2-ft. long blade," says Schulz.

He claims to have the only left handed knife ever made - and he made it. "I bought a knife with a slightly curved blade that was in good shape. I also bought an identical knife with a bad blade and heated the steel so it could be bent in the opposite direction, which converted it to a left handed model," says Schulz.

Another knife has a round metal handle and a long pointed blade at the bottom, where 2 small "dogs" stick out just above the point.

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Audrey Cadle is educating people about American Mammoth Jacks, a heritage breed that was developed by George Washington and others.

Eye-Catching "Mammoth" Donkeys

By Klaire Howerton

Audrey Cadle of Purcellville, Va., first heard of the Mammoth donkey breed when her husband went looking for a sturdy and surefooted pack animal for hunting. Audrey says they were overwhelmed by the size of American Mammoth Jacks (AMJ) when they went to visit a breeder.

"We decided we weren't ready for Mammoth donkeys and settled on large standard donkeys," Audrey says. After a few years of learning about and living with donkeys, Audrey felt they were ready for an American Mammoth Jacks. In 2006, the Cadle's first Mammoth donkeys came home to their farm.

Part of Audrey's passion for the AMJ is educating people about the breed. "They are a heritage breed that was actually developed by George Washington and a few others. Washington was gifted some large donkeys from Spain and he bred them to the largest he could find in the United States until he was satisfied with the size." AMJs are so rare they're listed as critical on The Livestock Conservancy's Conservation priority list.

Audrey turned to agritourism as a way to help promote and preserve the breed. "I first started participating in farm tours by joining our local county's tour association. They arrange tours twice a year - one in the spring and one in the fall. People would come to my farm during those weekends and I would offer donkey rides, time to pet the donkeys, and I would talk to anyone and everyone about the history and wonders of AMJ donkeys. People would come back year after year to see the donkeys and still do," Audrey says. "When I saw how much the public loved the donkeys, I started taking them everywhere. We rode them in parades, gave donkey rides at our town Heritage Days, took them to schools, and then started a 'Donkaholics' club for kids. Somewhere in there, I decided to try advertising about holding donkey birthday parties."

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British researchers are using "people free" machinery, including this tractor and combine, to prove farming can be done without humans.

"People-Free" Farming Possible

Researchers at a British University have tilled, planted, maintained and harvested crops for several years without a human ever entering a field. Called Hands Free Hectare (HFH), the project uses all autonomous machinery, including a tractor, harvester and drone.

"We wanted to prove that there was no technological reason a field couldn't be farmed without humans, and we've done that," says Kit Franklin, Harper Adams University.

The project received $340,000 in government funding to convert a small tractor and a quarter century old combine to autonomous capability. Each was outfitted with cameras, lasers and GPS systems.

By the second year only limited human involvement via remote control was needed. "We had to get the tractor to the right line, but once there, it drove itself to within 2-in. accuracy," says Martin Abell, a mechatronics engineer for Precision Decisions, one of the corporate partners in HFH. "Our combine ran autonomously throughout the cutting, and yet again it completed the headland turns without a problem."

Soil sampling was done with a drone. It was also used to monitor the crops for weeds and disease.

A highlight of the second year was being able to unload on-the-go. Drilling accuracy also improved significantly from year one.

Now in its third year, the project has expanded from one hectare (2.47 acres) to 35 hectares (85 acres). It has also expanded to multiple crops with plans for several more years of research in the works.

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As home-built windmill turns with the wind, a blacksmith hammers away on an anvil.

Weathervane Works After 75 Years

When someone told Alfred Geiger he could probably get more than $200 for a weathervane he made 75 years ago, he decided it was time to make another one. Besides turning with the wind, his creations have moving parts featuring working tradesmen.

Geiger made his first weathervane when he was 14 out of scrap metal he found around the farm to simulate a carpenter bent at the hip sawing wood, using eccentrics on a shaft to create the motion. Besides aluminum and copper scraps he used thick galvanized wire (used for fire service telephone wire) to create the shaft and hold four aluminum cups that catch the wind and rotate like an official weathervane. Mounted on a piece of copper tube, the vane fits on the copper tubing of a lightning rod. After more than seven decades, it still works atop Geiger's barn.

"That galvanized steel wire made 100 years ago has hardened with age so it's extremely hard. Just one strand and it's very durable," Geiger says.

For his new weathervane featuring a blacksmith hammering on an anvil, the 89-year-old used more modern scrap material, such as aluminum cups made from the band of an above ground swimming pool and other purchased material.

"The new one was exasperating because sheet copper is only so thick and I wanted a heavier grade," he says, adding he also didn't have access to heavy copper for the shaft, but made do with the heaviest he could find.

"The arrowhead is made of aluminum and it is joined to the copper with rivets and stainless steel wire," Geiger says.

Despite not having the heavier materials from his youth, the weathervane action is good, and he plans to mount it on the other end of the barn. And, if he gets a good enough price, he may sell the weathervane that has worked for him for most of his life.

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