By Kevin Krajick

Mining the scrap heap for treasure
Drive a mile or two west out of the small city of Decatur, Alabama, along the Tennessee River, past abandoned cotton fields and factories, and right near the Price Nelson Barbecue you'll come to Denbo Iron & Metal Co., Inc. You can't miss it: 60 acres piled three and four stories high with smashed autos, refrigerators, pipes, siding, water heaters. In one section lie 20,000 tons of machinery, steel floors and everything else metal that once was a Reynolds Metals plant.

Much of it is unidentifiable chunks, but occasionally you'll see a trace of some discarded life. A rusted mailbox—No. 21A. A child's red wagon with all four wheels. A 1962 penny. The whole thing is laced with roads of ankle-deep mud, masked men with sparking acetylene torches, and diesel cranes roaring around like 40-foot-high praying mantises that grab up and drop crushing loads of metal. To most folks this is a junkyard—a dead-end place with no value, history or nice scenery. A sort of 20th-century Hieronymus Bosch preview of hell.

If you think that, walk through the chain-link gate (make sure you wear your old clothes and heavy boots) and meet 70-year-old Morley Denbo and son, Joel, 43, second- and third-generation scrap-metal men, respectively. Far from worthless dumping grounds, places like this are central fountains of industrial power, founded on bittersweet rags-to-riches family sagas that trace American history in exquisite detail. Some people think they are beautiful.

With sledgehammers and giant machines that shred whole autos in a blink, the Denbos and thousands of other scrap "processors" are part of a system that supplies nearly half the nation's iron, steel and copper, 55 percent of the lead, a third of the aluminum, plus assorted titanium, zinc, molybdenum—each year, more than 60 million tons gathered from an intricate web of suppliers, sorted out, chopped up, bundled and sold to mills. There, it is remelted back into the stuff of toasters, cars and bridges. Without these scrap processors there would be no industrial America—or Taiwan or Turkey or Japan, who feed on their harvest to the tune of $3 billion to $5 billion a year in exports alone.

In the 1990s, this trade should, of course, be run just like everything else of global scale and influence: by giant international corporations. It's not. It is run largely by families like the Denbos, most of whom started out long ago as hungry immigrants, unafraid of getting dirt on their hands, owning only their own street smarts and maybe a wheelbarrow. Energetic small entrepreneurs are still coming into the business. But tough environmental laws and big-capital buyouts, along with the simple desires of many scrapmen's grandkids to just do something else, may grind this culture like a batch of old autos into the corporate maw. For now, says cigar-chomping, hard-hatted Joel Denbo, "it's one of the last old trader businesses, where you live by your own guile..."
and tenacity, by seeing the value in something others don't want and extracting it.

I got my own first taste of the value of scrap five years ago when my brothers and I tore down a junky modern addition to my old farmhouse in rural Schoharie County in upstate New York. Out of the crumbling walls came armfuls of ruined copper wire and pipe, and on a tip from a friendly plumber, I drove this particular part of the mess down to a nearby scarpyard. The owner weighed it up—52 pounds—and I walked out $46.80 richer. Hey, I realized: this stuff is worth something.

This is no big revelation for those in the know. Metals prices move with global economics, but as I write this, you can take broken aluminum lawn chairs to your nearest scrapman and he'll give you 35 cents a pound. Brass plumbing fetches around 50 cents, copper wire without insulation, 85 cents. Ferrous metals—steel and iron—are a lot harder work: $1 to $5 for 100 pounds, depending on the grade and whether they're attached to some undesirable substance such as plastic.

When the Hebrew prophet Isaiah said we shall beat our swords into plowshares and spears into scythes, he spoke the truth: metal has always been recycled without eco-conscious prodding, because it is worth something. In the Westminster Palace of the 14th century, one Geoffrey Chaucer, clerk of the king's works, is said to have collected and inventoried scrap metal. Massachusetts silversmith Paul Revere advertised in broadsides for all kinds of scrap. More than 800 years after it was felled by an earthquake, the bronze Colossus of Rhodes was dismantled by plunderers and allegedly made into weapons.

Trading in scrap is not the oldest profession, for during most of civilization there wasn't enough around to make a full-time living at it; the Industrial Revolution introduced a critical mass. Sadly, says Morley Denbo, who is something of a historian, war often provided a starting point. The earliest true dealer he can identify in America is Cline and Bernheim (now part of Steiner-Liff Iron & Metal Co.). The Nashville firm was hired by Union forces to cart away acres of smashed metal wagon wheels, cannon, canteens and bayonets after the 1864 battles of Franklin and Nashville. The Confederates lost both times. The debris went to nearby foundries. Some 13,000 soldiers on both sides lay dead or wounded.

Many families who run today's trade arrived in the great European migrations from the 1880s to the early 1900s. Certain groups gravitated to the trade—mainly Eastern European Jews, and some Italians. Most knew nothing about metal—they came as farmers or grocers—and started by recycling any castoffs they could find. Larry Fox, a fifth-generation dealer in San Jose, California, says his great-great-granduncles came in 1886 from Hungary and collected burlap sacks and bottles for cleaning and resale. "It was something you could get into with very little capital," he says. "Settlement was
At Denbo, an operator oversees the double magnetic separation system. This monster mechanism segregates ferrous metals, carried away via the conveyor at top; non-iron materials depart on the conveyors at left.

so new there wasn’t a lot of used metal.” Fox, his father, uncle and other family members still run Markovits & Fox, recycling scrap, including discarded electronic components from nearby Silicon Valley that are passed on to specialists in precious-metals extraction.

The Denbos’ own family history is characteristic of the trade. In 1903, Morley’s uncle Ben came to New York from the Lithuanian shtetl of Bupt and moved South. Ben’s brother Isaac “Granddaddy Ike” Denbo, Morley’s father, followed in 1907. The family had run a store and dairy in Bupt, but now in the Deep South with no money and strange accents, the brothers turned to peddling. They drove a horse and wagon farm to farm, trading mules, buying and reselling eggs, walnuts and ginseng, and bartering for mink, possum and skunk furs—as well as such recyclables as broken plowpoints, horseshoes and even cattle bones, resold for rendering. “They had a big cage where they used to recycle old, smelly feathers from feather beds,” says Morley. “You’d blow in air to make them all nice again, and stuff them into new ticks. You did any damn thing to survive back then.”

In 1917, Ike left to fight for his new country in World War I, selling his business to his best friend, another immigrant, Louis Miller. Louis’ grandson still runs Ike’s original firm in Huntsville, Alabama; the Denbo kids grew up playing with the Miller kids, and some 60 years later Sara Miller, Louis’ granddaughter, married Joel, Ike’s grandson. They have three daughters.

After the war, Ike restarted his business in Pulaski, Tennessee, just north of Ben’s place in Decatur. Gradually the trade in bones, bottles and fur fell off as industrialization took over and more metal arrived. In Ike’s case, much scrap came with an exodus of farm families fleeing the 1930s Dust Bowl down U.S. Highway 31 through Tennessee and Alabama, toward the greener pastures of Florida. If they made it, many of their jalopies did not. Ike, located on the highway, bought the broken vehicles, dismembered them with sledgehammer and ax, and pushed them in a wheelbarrow up a plank and into a Louisville & Nashville railcar. “Daddy didn’t make any money on that,” explains Morley. “He usually felt so bad, he bought the families a meal and a room for the night at the hotel.” Ike also bought old canning jars and smashed them with a hammer to retrieve the zinc
lids that held the glass tops—one of Morley's first jobs. With his practiced eye, by age 13 Morley was directing hired men sorting out myriad nonferrous items.

World War II propelled thousands of little yards like this into a mighty industry. At the most desperate hour, Boy Scouts and housewives collected everything metal, even foil from inside cigarette and chewing-gum packs. The government contracted scrap dealers to broker the flood—100,000 pounds some weeks at Ike’s, an unheard of amount back then. Everything went, even the prized Civil War cannon from Alabama courthouse squares. Morley remembers one afternoon in 1942 when a farm couple arrived in a pickup truck. In back were their parents' zinc grave markers. “They had three sons in the war,” he says. “Do you think people would do that today?” The markers went up the plank and into the railcar.

Morley served in the Navy, then married—another scrapman’s daughter, of course—and later bought Uncle Ben’s business in Decatur. The industry grew by leaps as warships and tanks became the stuff of interstate highways and shopping malls. But the postwar crop was also bitter. For one thing, the Denbos, along with many Jewish families, learned the fate of their loved ones. Bupt had been liquidated in the Holocaust, along with 18 Denbos. No new cousins would ever come over.

The Best Years of Our Lives, the 1946 film about the troubles of returning soldiers, has an unforgettable scene in which a young ex-flier visits a great graveyard of warplanes; as he climbs into a cockpit, memories of combat wrench his body and heart. The scrapman on the site orders him out—the planes are his property now. The flyer recovers his soul by hiring on to help tear the machines apart. Swords into plowshares.

New methods speeded the reprocessing and boosted profits. At Denbo, axes and hammers were replaced with big power shears; backbreaking wheelbarrow labor with cranes. In 1959, the Proler scrap firm in Houston—founded by father Ben, and at that time run by sons Sammy, Hymie, Izzie and Jackie—came up with the Prolerizer, the first machine to chew whole autos into fist-size chunks. Shredders were honed until, in the 1970s and ’80s, they single-handedly devoured the countless hulks left clogging the roadsides when hand demolition became too costly. Today, 95 percent of all junked autos are recycled—the biggest single scrap-steel source.

Recycling efforts resurgent

A growing interest in the environment has routed more material to yards, too. In recent years 18 states and many towns have banned the discarding of refrigerators, washers and other white goods in landfills; 75 percent of this junk was recycled in 1995, up from 32 percent in 1990. Recycling of municipal trash has tripled since 1985. Sixty-two percent of all aluminum cans and 56 percent of steel cans are recycled.

Even steelmaking is more scrap-friendly. Commonly used furnaces need 75 percent virgin ore for each batch of steel. But since the ’80s, electric-arc models using nearly 100 percent scrap have come on line and now account for 40 percent of production. The Denbos are perfectly positioned again: a $500-million ultramodern electric mill has opened ten minutes down the road.

With more than 100 employees and dozens of giant machines, the Denbos can go through as much as 200,000 pounds of metal in an hour. “Oh, they’re a local legend,” an antique dealer told me at his Decatur shop. “They made a fortune out of junk.” Some employees, like Betty Cowart—“Miss Betty”—the comptroller, or Gerald Yeager, an equipment operator and a onetime Denbo’s state-of-the-art shredder can render an automobile into fist-size chunks in under a minute.
During World War II, all scrap metal, even a child’s toy streetcar, was essential fodder for munitions makers.

Joel left to get a B.A. in business in Texas; he knows how to run and fix everything. “You have to crawl around in waist-high muck sometimes to do it,” he says. True to tradition, Denbo buys most any metal from anyone—at least anyone who does not play dirty tricks, like weighting aluminum cans with gravel or pawning stolen goods. (Chicanery skyrockets whenever some metal’s price goes up. Electric cables—a favorite target—have electrocuted would-be thieves in Philadelphia. From Houston to Denver, traffic signs, fire-hydrant parts and manhole covers vanish. Once, someone stole two-thirds of the aluminum-sided Dunk ‘N Dine eatery in Atlanta.)

Metal suppliers come in as many varieties as rainforest butterflies. The smallest range from car owners who show up with deceased lead batteries to Cub Scouts with empty soda cans. A little farther up the scale are tradesmen who sell leftovers: plumbers with broken toilet flushometers, locksmiths with used brass strikers and doorknobs. The country’s 12,000-some auto dismantlers—whose junkyards are often confused with scrapyards—are a separate cottage industry, stripping old vehicles of reusable parts and selling the hulks as scrap.

Some entrepreneurs roam county to county with mobile crushers, charging dismantlers to squash cars for cheaper shipment, or buying them for resale. Other specialists broker only catalytic converters, containing a tidy $15 to $20 of palladium each. Joel assured me that a few low-tech collectors like Ben and Ike remain, knocking on doors for dead lawn mowers and old washtubs. In the trade, they are still called “peddlers.”

Most days at the yard now, small-time contributions are dwarfed by items from industries and governments: warehouses of Vietnam-era helicopter parts auctioned by the Department of Defense; turbines from the Tennessee Valley Authority; part of a Saturn V rocket from the space program in Huntsville. (“Probably the biggest piece of aluminum ever recycled,” says Morley.)

At any scrapyard, fantastic finds

Fabulous cornucopia is everyday inventory; at a scrapyard in New York City one day, I came across a 55-gallon drum full of $1 gaming tokens from El Embajador Casino in the Dominican Republic. This is all “obsolete” scrap—manufactured items used and discarded. Then there is “prompt” scrap—coils, grindings, stampings, borings and turnings that fall to factory floors in the process of manufacturing everything from ball bearings to auto-body panels. Fifteen percent of ferrous scrap and 50 percent of aluminum scrap is prompt. With more plants opening around Decatur, truckload after truckload of this material rolls in daily at Denbo.

“We don’t just take stuff in and send it out,” Joel told me as we walked around. “You have to know what it is, what it’s worth, how to hook it up with the right customer.” It took him years to distinguish valuable tungsten carbide from other metals, desirable nonlead solder from low-grade lead types. Ferrous items typically are sorted into 15 alloys and grades, nonferrous into more than 100, and all are “prepared” in various ways.

In the nonferrous section, a worker strips aluminum screen doors of steel parts. Four laborers work a machine that pulls insulation off thick copper cable. Sorted items are stacked in bins or molded into 1,200- to 7,000-pound bales by a giant press. A quarter-acre near a rail siding is covered with electric motors to be shipped abroad; Denbo can’t hand-dismantle them cheaply enough, but the Chinese pay for this privilege.

Out back, ferrous objects are sorted and chopped into progressively smaller pieces. A crane lowers a steaming 4,500-pound electromagnet, and a sewer pipe weighing probably 3,000 pounds actually leaps a foot through the air to meet it. The operator deposits the pipe near three masked acetylene torchmen, who slice it
up in a blinding dazzle of bluish fire. Nearby, another crane loads deafening avalanches of three-inch-thick steel girders into a 6-by-25-foot covered steel trough. The stuff clunks toward a mammoth contraption called a guillotine shear that looks scarily like the last thing Marie Antoinette must have seen. It pounds down every ten seconds with 1,100 tons of hydraulic force.

Ferrous foreman Mike Johnson took me over to the shredder. A clawed crane plucked a big sedan and set it on a conveyor that ended in a steeply dropping ramp. From the safety of a glassed-in control tower just above, we watched the car tip off and slide down. At the bottom, a toothed roller grabbed on and slowly fed the victim into a dark mouth while chomping up and down over collapsing bumper, hood and roof—a *Tyrannosaurus rex* for Toyotas. The car squealed, crunched and popped while steam and bits of glass whizzed out; then it was gone. Inside the belly, the final throes could be heard but not seen: fourteen 342-pound bell-shaped manganese-steel hammers swinging from a rotor whirling ten times a second at 3,000 horsepower. “Goes in the big hole, comes out the little hole,” Johnson observed. After two weeks, the shredder’s hammers are thrown into the scrap heap and replaced.

Once the stuff emerges from the shredder, a conveyor carries it to the double magnetic separation system (p. 37). Whirling magnets pick out ferrous chunks. Conveyors stream from underneath, bearing twisted bits. Unfortunately, not everything can be recycled—a growing challenge for the industry. One conveyor from the separator ends in a pile of “fluff”—mixed-up plastic, glass, rubber and other junk that goes to landfill—about 20 percent of the average car, and growing, as carmakers increase nonmetals and cut back on the steel. Most residue is not considered hazardous, but you have to be careful. The Denbos are spending close to $1 million paving parts of their yard to contain oil and other fluids to comply with rules set by the Environmental Protection Agency. If ozone-wrecking chlorofluorocarbons in old refrigerators are allowed to escape into the air, a fine of up to $25,000 a day may be imposed; the Denbos will no longer accept these appliances unless the CFCs have been professionally removed.

Pollution caused by others may hurt the worst. Many smelters that bought scrap over the decades have now ended as catastrophic Superfund sites because they badly handled the byproducts of remelting. Under a legal quirk, scrap processors can be held responsible as sources of “waste”—that is, the metal they sold—if smelters can’t pay for cleanups. Attorneys for the scrap trade association, the Institute of Scrap Recycling Ind-

*Kevin Krajick, who writes from upstate New York, reports that he is now saving any scrap that comes his way, from brass latches to old aluminum gutters.*
tered only by diversified companies with deep pockets.

The Prolers got caught in the shifting complexities of the export business. After inventing the Prolerizer, they had become top players in scrap-steel export. But when the market for steel exports faltered, Proler International Corp. ended up owing $26 million for inventory it had bought. The Prolers had survived ups and downs for 72 years, but now the ante was too high. Last year, Schnitzer Steel Industries, a Portland-based scrap firm, bought them out. They are not alone. The 112-year-old David J. Joseph Company of Cincinnati is owned by SHV Holdings N.V. of the Netherlands. Schiavone-Bonomo, a 98-year-old New York/New Jersey outfit, is no longer run by anyone named Schiavone or Bonomo. A few days after the Proler buyout, I talked to Hymie Projer, 69, as he cleaned out his office. “I do feel sad,” he said. “But it’s in the best interest of the shareholders for us to sell.”

In an effort to prove him wrong, I went 150 miles south to New York City, traditional gateway of enterprise. After some inquiries I found the glass-strewn corner of 207th Street and Ninth Avenue. A graffiti-like sign painted onto a garage wall read “SCRAP METAL.”

Inside I found third-generation scrapman Paul Boritzer (guarded by a pit bull puppy named Lucky) buying small nonferrous items from local tradesmen and homeless people. His father runs a metals brokerage nearby.

Around 4 P.M., a maroon Econoline van about 87 percent on its way to being scrap itself rattled in, and two oil-streaked men in their twenties leaped out. Rafael Garcia and Edwin Arias, Dominican immigrants, roommates and best friends, told me they had quit their jobs as plumbers. He was good for $300 or $400 a day in faucets and pipe. Now he’s died and no one wants to do it. Nobody wants to deal with the schmutz [the dirt]."

Kivort’s scrapman father came from Lithuania, near the Denbos’ onetime home, but Stan has diversified. He still sells scrap to mills, but he also buys and sells new steel products including beams and rebar. One of his sons is a lawyer. Children of other scrap dealers have moved on as doctors, artists, oil entrepreneurs. “Little guys are passé,” said Stan. “Peddlers are almost over.”

After my visit in the South, I went back to Schoharie County, New York, where I had done my first copper trading. Stan Kivort, 60-year-old president of Kivort Steel, Inc., in the hamlet of Warnerville, echoed Proler. Bigger guys with shredders had cleaned out all the old cars from hedgerows around here, he told me. Worse, he said, “I used to have a guy who picked up from the
A Denbo supervisor, Bud Seay, maneuvers a forklift to cart away a well-secured bale of scrap aluminum.

six months ago to collect broken auto parts from garages for recycling. Where did they get this idea? "We saw other people doing it!" shouted Rafael with an ebullient smile. It was something they could get into without any capital. Their main expenses: gas, work gloves and clothes. "You can’t clean them," he explained. "After one or two weeks we throw them away."

They showed me an invoice from a Bronx yard; today they had already gathered and unloaded 3,000 pounds of iron and steel. And now these guys were down on their knees on the pavement with hand sledges, smashing plastic parts off three brass car radiators so Boritzer would give them top price. They called themselves junkeros. Granddaddy Ike and Uncle Ben would have recognized them as fellow peddlers.

A few days later I met Edwin at 7:45 A.M. outside their Bronx apartment for a day’s work. Rafael had to go make a deal for some wholesale blue jeans—a sideline perhaps akin to possum furs—so it was us, and a helper named Simon. At the first stop, National Auto Service on Jerome Avenue, Edwin jumped out and ran in. The manager had a couple of twisted iron pipes, which we grabbed and threw in back with a clang. Heading down to La Solución Auto Repair, we picked up an engine shaft and a few brake shoes. Another place yielded a 6-cylinder truck engine and transmission. "This is how we do it," said Edwin. "Poco a poco." Little by little. Sometimes he paid $1 or $2, but usually people gave the stuff away.

"At first," he explained, "everything was just scrap metal to us. We sold it all together, same price. Then people say to us, ‘Hey, why are you selling that for nothing?’ They discovered that zinc or brass radiators sold by the pound, not the ton. Remachinable brake shoes fetched 10 cents apiece; people who knew how to rebuild a starter might pay several dollars for one. "Every day you learn something different," said Edwin.

Late that morning, we got lucky—a garage going out of business. With the owner’s permission, we began rummaging across the filthy floor and over shelves, dragging plastic trash barrels behind us. Grease-covered license plates, tire rims, carburetor parts and pulley wheels went in. Gears, nuts and bolts, ignition coils, a broken winch, a steering column, all hauled to the van.

After 20 stops, it was time to sell. Morillo & Ramirez Auto Electric gave $3 for a starter. Frankie’s Auto coughed up a flat $5 for 49 brake shoes. A fixable transmission brought a whopping $10. Much of the rest was true scrap, good only for remelting. We stopped at Boulevard Smelting Corp. and sold a lead battery for $1.25. Other nonferrous items were put aside for delivery to Boritzer, whose shop is Edwin and Rafael’s dream. "We could start our own with $20,000 for a scale and a garage," said Edwin. "Maybe five, seven years from now."

Finally we drove up to the truck scale at the entrance to Bronx Iron & Metals, a scrapyard run by the now non-éponymous Schiavone-Bonomo Corporation. Beyond that lay cranes, torches, mud and mountains of metal—much like Denbo’s. Except that instead of giant trucks bearing pieces of rockets or turbines, this place bustled with vehicles like Edwin and Rafael’s—broken-down vans, pickups and converted tow trucks, loaded down with gleanings from Bronx streets and staffed by one or two fast-moving guys. All backed up, shoved deliveries onto the scrap heaps and headed out for more.

Our 6-cylinder truck engine was quickly pushed to the back of the van and tipped out the door. We heaved other objects out, then, with oil-saturated gloves, combed leftover bolts and gears down the length of the floor and out the tail. When we hit the scale on the way out, it showed us 1,820 pounds lighter. The man at the window handed Edwin $48.23. Total day’s gross: $90.50.

Work was over. We drove to a tiny Dominican restaurant. After a few minutes of jokes and chat, a middle-aged woman turned on a water tap, and Edwin leaned his arms over the lunch counter into the stream. She squeezed a clump of green dish soap onto his upturned palms. He washed and washed. Simon did the same. After, they sat down and ate rice and beans and meat, and no one said a word for quite a while. In the Denbo yard, jumbled engine blocks and cast-iron scrap take on the aspect of impromptu sculpture.