

# Silver: Its versatility is growing

National Geographic Society

If silver can ease the pain of a burned child, heat a home, and help send a shuttle into space, how long will it be used to dress up dinner tables?

Although it's still the stuff of wedding presents and jewelry, most silver today is sought for a growing list of more practical uses. The United States used 157.2 million troy ounces of silver in 1979, but only 13 million ounces went into sterlingware and another 5.3 million ounces into jewelry.

Writing in the September issue of National Geo-

graphic magazine, Allen A. Boraiko describes how the rest of the silver was used and why.

**SILVER'S RESISTANCE** to most acids and corrosion aligns it with gold as a noble metal. Only silver rivals gold's ability to bend and stretch. Boraiko writes:

"A smith can draw one grain of silver — about five-hundredths of a troy ounce — into 400 feet of wire, or heat it into leaf nearly 150 times thinner than this page."

Nothing else reflects light so well and uniformly. Even the thinnest sheet will reflect 95 percent of the light striking it. Silver concentrates sun rays on solar collectors, backs the best mirrors, and, in extremely fine layers, protects the heat-reflecting gold films on office windows. But that's only the beginning.

"Silver will activate oxygen to kill bacteria, and in some swimming pools, charcoal filters impregnated with silver eliminate germs and the need for irritating chlorine," Boraiko writes. "European airlines purify their drinking water with silver."

Down on earth, silver has become valuable in medicine. Silver sulfadiazine is a soothing compound that prevents bacterial growth and infection in burn victims. Surgeons mend bones using cement containing antibacterial silver salts. More than 60 metric tons of silver a year goes into the mouths of Americans for dental work.

That's not all. No metal — not even copper — conducts heat and electricity as efficiently as silver. Silver wires lace silicon solar cells, and silver oxide batteries power hearing aids and calculators, submarines and satellites.

**HARDENED WITH** tungsten or molybdenum, miniature disks of silver tap together and switch current from wire to wire in cars and lights; silver-

plated disks do the same in telephones and computers.

Silver serves as a natural dry lubricant in the electrical contacts of a dishwasher, and as a friction reducer in the main engines of NASA's space shuttle.

Then there's photography. In 1979 of those 157.2 million troy ounces of silver used, 66 million ounces went into photography. In film, crystalline silver salts instantly detect light falling on them and permanently record it.

When the film is processed, the salts become silver grains that amplify the image a billion times, producing a picture. The salt crystals are so sensitive, says one researcher, that just one could detect the light falling onto the Earth from a candle on the moon.

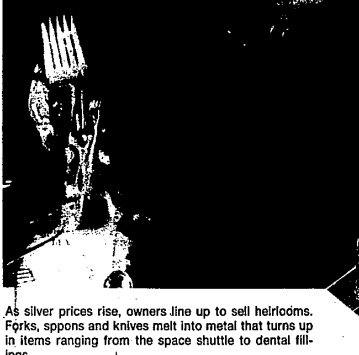
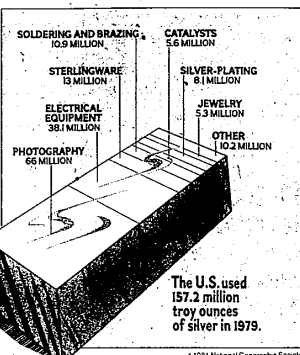
"With so much use — even aside from jewelry, tableware and coins — there must be quite a lot of silver around," Boraiko writes. He discovered there is and there isn't.

"Experts think that in the past 5,000 years we have mined 933,000 tons of silver, three-fourths of it in the Western Hemisphere and half of it in the past century," he writes.

That seems plenty, yet if all the silver ever mined were divided equally among the world's people, each would receive only 6.7 ounces, barely enough to make a six-piece place setting of sterling silverware.

Actually, the share would be smaller because of the silver lost back to the Earth by way of such mishaps as sunken Spanish silver fleets or even missing money. In the first 50 years of this century people fumbled and lost an estimated 100,000 tons of silver coins.

Silver goes into use and into vaults so widely and rapidly that for decades mines alone have not met the world demand. To make up the difference, old coins, silverware, computer wiring panels, and other silver scrap go into the melting pot.



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5811 Middlebelt near Ford Rd.  
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