Episode Book

EPISODE #5761

Why You Shouldn't Dremel Your Antique Silver

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SYNOPSIS

Every polish removes a sliver of the original metal, and you can't put it back. That single fact reframes everything about caring for antique silver and brass — from the chemistry of tarnish to why conservationists wince at power tools. Drawing on guidance from the Canadian Conservation Institute, Winterthur Museum, and the National Park Service, this episode walks through what tarnish actually is (silver sulphide, not dirt), why brass patina and active corrosion demand opposite responses, and the surprisingly gentle museum method: precipitated chalk paste, straight strokes, and a reversible microcrystalline wax. Along the way: why your mother's twice-a-year silverware ritual was applied chemistry, why the Dremel isn't the villain, and why storage beats polishing almost every time.

TRANSCRIPT



Corn

There's a smell that goes with this. Silver polish, ammonia, old cloth. And a newspaper spread across the kitchen table with every fork in the house laid out on it in rows.



Herman

And somebody's mother standing over it, saying you missed a spot on the tines.



Corn

Right. Daniel sent us something this week that's basically about that. He wants to get into maintaining and polishing metal furniture, antiques specifically, brass tables, silver tableware. And he's got a few things he wants answered. First one, straight up: can you use a rotary tool, a Dremel, on this stuff?



Herman

The honest answer is going to take us about twenty minutes.



Corn

I know. Second thing he's asking, what did traditional polishing and maintenance actually look like, before everything came in a bottle with a spray nozzle. And third, he says he remembers his mother cleaning the silverware once or twice a year, and it being a big thing in the house. He wants to know what she was actually doing.



Herman

She was removing silver sulphide with an abrasive, by hand, from every crevice of a hundred pieces of flatware, and she probably didn't know that's what it was.



Corn

Which is a better answer than she got at the time.



Herman

Everybody's mother deserved a chemistry degree for that.



Corn

So where do we start with this? Because the layperson's instinct is make it shine. That's the whole goal. And I gather that's not the goal at all, in the places that actually know.



Herman

That's the contradiction at the centre of this whole topic, and it's worth naming once and then getting into the science. The instinct is make it shine. The conservator's instinct is don't touch it, or touch it as little as possible, because every polish removes a bit of the original metal, and you cannot put it back.



Corn

So shine is not the objective.



Herman

Shine is a side effect of an irreversible act. That's the reframe. And once you have that, everything else in this episode follows from it.



Corn

Alright. Then start with the thing itself. What is tarnish?



Herman

Silver tarnish is mostly black silver sulphide. Silver on the surface reacts with sulphur-containing gases in the air, and the main one is hydrogen sulphide. You get a compound of silver and sulphur, and it's black.



Corn

That's the whole thing? It's not oxidation, it's not rust, it's sulphur.



Herman

It's sulphur. Professor Einar Uggerud at the University of Oslo puts it about as plainly as it can be put, he says when silver is exposed to air, a coating forms on the surface, and the black coating is mostly silver sulphide, a compound of silver and sulphur.



Corn

So it's not dirt. It's a chemical product sitting on top of the metal.



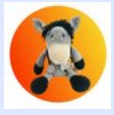
Herman

It's a corrosion layer. Mild, cosmetic, but corrosion. And the way it develops matters. It starts as an iridescent film, that faint yellowish or purplish sheen you see on a piece that hasn't been out of the drawer in a while. Then as the layers thicken it goes brown, then black.



Corn

And that's why it's patchy. You get pieces that are half rainbow and half black.



Herman

Because the exposure isn't even. And relative humidity makes a real difference. High humidity accelerates it. Below about fifty percent relative humidity the rate drops off, which is why the storage advice for silver is keep it dry.



Corn

So the attic in July is the worst possible place for Grandma's tea service.



Herman

The attic in July is the worst possible place for almost everything, but yes.



Corn

Now brass is different.



Herman

Completely different chemistry. Silver is a noble metal that reacts with sulphur. Brass is copper and zinc, and copper alloys react with their environment and with handling to form a range of things, some of which you want and some of which you really don't.



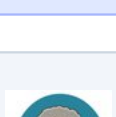
Corn

The patina.



Herman

The patina, which is a stable, often dark, sometimes greenish layer that builds up over decades and is, on a lot of antique brass, the thing that makes it valuable. And then there's active corrosion, the bright green powdery stuff, which is a different problem and needs a different response entirely.



Corn

So you've got three things on a brass table. A patina you should probably leave alone, a tarnish you might want to reduce, and an active corrosion you actually have to treat.



Herman

And the treatment differs for each one. That's why the single question, should I polish this, doesn't have a single answer. It depends which of the three you're looking at.



Corn

So let's go at the Dremel question directly, because that's what Daniel asked first.



Herman

Dremel sells brass brushes and polishing kits, and they market them for soft metals. Gold, bronze, copper. They're not lying, those attachments will polish soft metal. Third-party guides, hobby sites, they'll tell you a rotary tool can polish brass and silver with felt bits and some compound at low to medium speed, and that's true too.



Corn

So far everyone's agreeing.



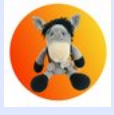
Herman

And then you go to the conservation side and it's a completely different posture. There's an antique brass guide that lists using coarse abrasives or power buffers on plated or detailed objects as one of the top mistakes people make. Not a minor one. A top one.



Corn

Why is it so bad?



Herman

Three reasons, and they compound. First, speed. A rotary tool turns at thousands of revolutions per minute. Hand polishing is maybe a couple of strokes a second, so you're moving the abrasive across the surface orders of magnitude faster. You remove metal far faster than you mean to.



Corn

And removal is the whole problem.



Herman

That's the second reason. The golden rule of this entire field is that every time an object is polished, a certain amount of original silver is removed from the surface. Winterthur Museum states it that way, and then adds the part that matters most, that it becomes even more critical when the silver surface is a fine plating over another metal.



Corn

So on silver plate, you're not polishing the silver. You're racing the silver to get to whatever's underneath.



Herman

You're removing the layer that makes it look like silver. And a rotary tool does that in seconds. On a piece that took a hundred years to accumulate a nice even surface, you can cut through in one afternoon because you got impatient with the fiddly bits.



Corn

What's the third reason?



Herman

Heat. Rotary tools generate friction heat at the contact point, and heat does things. It can lift lacquer, it can disturb gilding, it can soften a wax coating you wanted to keep. And on brass specifically, a lot of antique pieces have an intentional darkening in the recesses, the dirt and the oxide sitting in the engraved lines are what give the piece its depth and its legibility. Those are usually a deliberate finish, not neglect.



Corn

And the Dremel goes straight through the darkening.



Herman

It erases it. And once it's gone, you can't put it back authentically. You can fake it, and anyone who knows the difference will see the fake.



Corn

I want to be fair to the tool here, because the tool isn't the villain.



Herman

No, and I'd say this plainly. Dremel makes good tools. I've used one. For cleaning up a bracket, for cutting, for grinding a weld, it's exactly the right answer. The problem isn't the tool, it's what an antique is.



Corn

Say more.



Herman

The Dremel is designed for a world where you're shaping material, cutting it, removing stock, and you want to do it fast. An antique is a piece where the material is the record.



Corn

So the tool is optimized for exactly the thing you're not allowed to do.



Herman

The tool is optimized for removing material quickly, and the object's value is in the material that's left. They're pointed in opposite directions. That's why no conservation body endorses it. I went looking. There isn't any endorsement. The consistent professional recommendation across the Canadian Conservation Institute, Winterthur, the National Park Service, is hand polishing with the mildest abrasive you can get away with.



Corn

On the plated, detailed, gilded, lacquered stuff.



Herman

On anything where the surface is doing work. There are cases where a rotary tool is fine, a solid brass lump with no plating and no detail and no finish to preserve. But that's narrowing the field down to the pieces that don't need help.



Corn

So what's the actual test? If someone's standing in front of a brass table and a Dremel and they want a simple answer.



Herman

The field test is to ask what's on the surface and whether you can put it back. Plating, lacquer, gilding, a patina, intentional darkening in the recesses, tool marks. If any of those are present, the answer is no. Because shine can be recreated later. Original surface cannot.



Corn

And the Canadian Conservation Institute makes the point that even hand polishing leaves fine scratches.



Herman

It does. And the line from them that I keep thinking about is that the resulting finish, or scratch pattern, is often influenced more by the polisher than by the polish. Which is a way of saying your technique and your patience are the variable.



Corn

So a power tool multiplies the one thing you have least of, which is control.



Herman

It multiplies the polisher. And if the polisher is in a hurry, that multiplication is the problem.



Corn

Which is the nice part about Daniel's mother. Because she was not in a hurry. She had a whole evening for it.



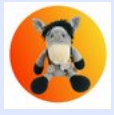
Herman

She had the correct speed, and she arrived at it by having no alternative.



Corn

So what were the museums doing? If the Dremel is out, what's in?



Herman

For silver, the museum method is about as gentle as it gets. Wash first with mild detergent and distilled water, and that step matters because you're removing dust and grit before you rub anything. If you polish a piece with grit on it, the grit is the abrasive, not the polish.



Corn

So you wash.



Herman

You wash, then you polish with a paste of precipitated calcium carbonate, which is precipitated chalk, and water, on a soft cotton cloth. And the rubbing is straight back and forth strokes, not circles.



Corn

Why not circles?



Herman

Because circles and random scrubbing produce a scratch pattern that reads as damage, and there's a direction of work that reads as intentional. Straight strokes keep the finish even. It's the same reason you sand with the grain.



Corn

And then rinse and buff.



Herman

Rinse and buff. That's it. That's the whole method. Montpelier, James Madison's house, mixes that chalk paste in house, and that's what they use on the collection.



Corn

Brass is a bit more layered.



Herman

Brass has more steps. Dust with soft brushes first, dry. Remove grease with a fifty-fifty methanol and water mix on swabs, that gets finger oils off. Then polish with the precipitated chalk paste. Then a jeweller's cloth, the kind impregnated with jeweller's rouge, which is a very fine iron oxide. Then, and this is the step people skip, you finish with a microcrystalline wax coating.



Corn

What does the wax do?



Herman

It's a barrier. It slows re-tarnishing, because it stops the sulphur gases getting to the metal. The traditional recipe is equal volumes of mineral spirits and bleached microcrystalline paste wax, apply it, let it set, buff it off. And it's removable later with mineral spirits, which is the point. It's a reversible coating. You're not adding anything permanent.



Corn

Which is the whole philosophy in one move. You protect the surface without altering it.



Herman

Reversible, minimal, and documented. That's conservation in three words.



Corn

What about storage? Because everyone's instinct is to polish, and I gather the actual answer is to store better and polish less.



Herman

Storage is the real anti-tarnish strategy, and almost nobody talks about it. Silver tarnishes slowly when it's sealed away from sulphur. So you seal it away from sulphur. Polyethylene bags, acid-free tissue, silica gel to keep the humidity down, activated charcoal, and a



Herman (continued)

tarnish-inhibiting cloth.



Corn

There's a specific product for this.



Herman

Pacific Silvercloth. It's a fabric embedded with tiny silver particles, and the point of those particles is that they scavenge the sulphur gases before they get to your silver. So the cloth sacrifices itself.



Corn

The cloth takes the hit.



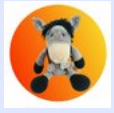
Herman

Uggerud half-jokes that you should just vacuum-pack the silver, and honestly the joke is only half a joke. Removing the air removes most of the problem.



Corn

So Daniel's mother polishing twice a year wasn't doing it wrong.



Herman

She was doing it exactly right for the technology and the storage she had. If your silver lives in a felt-lined drawer in a house with normal humidity, it's going to tarnish, and someone has to take it off. The only question is how often and how gently.



Corn

And the answer is as rarely as you can stand, and as gently as you can manage.



Herman

That's the whole thing. Montpelier polishes its eighteen-hundreds silver once a year and only dusts in between. And the curator's line about it is, if the silver in the collection were polished multiple times a year, the piece would be all but gone.



Corn

Once a year, and the alternative is it disappears.



Herman

Over a long enough timeline. Every polish is a withdrawal from a finite account.



Corn

So now let's do what Daniel actually asked, because he asked what his mother was doing, and I think we can answer it pretty precisely now.



Herman

We can. Twice a year, before the big meals. Thanksgiving, Christmas, or in a Jewish household before the High Holy Days. The good silver comes out for the table, so it has to be presentable, so it gets polished.



Corn

And she's laying out every piece on newspaper.



Herman

On newspaper, which is a practical choice, because the polish gets everywhere and you'd rather it go on newsprint. She's washing off dust and grease first, whether she thinks of it that way or not. Then she's working a commercial polish into each piece. Goddard's, Silvo, Wright's Silver Cream, Twinkle, Hagerty's, those are the classic ones in that era.



Corn

And then the part that made it take all evening.



Herman

The toothbrushes and the cotton swabs. Getting dried polish out of the crevices of ornate handles, out of the fork tines, out of the pattern on the spoons. That's the fiddly part and it's most of the work. The big flat surfaces take two minutes. The carved handle takes twenty.



Corn

So it was a big thing because it was slow.



Herman

It was slow, it was done in bulk, and it was done on deadline, because the meal was coming. There's a reason it's a memory rather than a chore. It's the one time of year the family sat down with the silver and went through every piece.



Corn

And it was often communal.



Herman

It was. Families did it together. Synagogue crews did it together, and I've read an account of exactly that, a group with containers of silver polish and packages of toothbrushes, working through the community's silver before the holidays. Which is a nice image, the whole job shared out.



Corn

When did this start, though? Before the twentieth century this was a much bigger deal, right?



Herman

The Victorian era made silver polishing a weekly household practice. Weekly. It was part of the rhythm of running a house, like laundry. Then by the twentieth century, as households got smaller and domestic labour changed, it relaxed down to seasonal. Which is Daniel's mother's generation. Once or twice a year.



Corn

So she was doing the Victorian weekly version, compressed into an annual event.



Herman

Exactly the same job, performed at one fiftieth the frequency, which is why it felt like a big thing. It was a season's worth of Victorian labour crammed into one evening.



Corn

Now, the methods to avoid. I want to go through these because a lot of them are the ones people recommend to each other.



Herman

Start with the chemical dips. Tarn-X and its relatives. They dissolve the tarnish, but they also dissolve silver, and they strip the factory patina off the piece and leave it looking flat and slightly wrong. They also pit the surface over time. And the active ingredient in a lot of them is acidified thiourea, which is a strongly suspected carcinogen.



Corn

So don't soak your flatware in that.



Herman

Don't soak your flatware in a suspected carcinogen, no. And the modern restorers are blunt about it. Jeffrey Herman, who's been restoring silver since the nineteen-eighties, says never use them.



Corn

What about the aluminium foil and baking soda trick? Because that one's everywhere.



Herman

That's the one that gets shared constantly, and it's a great example of a viral tip that's actually harmful. It does work, and it's impressive that it works. You line a bowl with foil, add baking soda and hot water, drop the silver in, and the sulphur migrates off the silver onto the foil. Electrochemically.



Corn

So the chemistry is real.



Herman

The chemistry is completely real. The problem is what it leaves behind. It strips the factory-applied patina, and on sterling it can etch the copper out of the alloy, and sterling is nine hundred and twenty five parts silver to seventy five parts copper. So you pull the copper out of the surface and you're left with a white, chalky looking finish.



Corn

Uggerud flagged a different problem with it.



Herman

He did, and it's a good one. He wonders whether the surface becomes uneven if you do this over and over, because the silver doesn't necessarily settle back exactly where it started. So the details become blurred. You're moving metal around at the atomic scale and not putting it back in the same arrangement.



Corn

The finish goes soft.



Herman

The crispness goes. The sharp edges of the engraving get a little softer each time.



Corn

Toothpaste.



Herman

Never. It's too abrasive. It'll shine a piece up and it'll take silver off doing it. It should never be used as a silver polish.



Corn

Dishwasher.



Herman

The heat and the harsh detergent whiten silver and take the shine off it, and on hollow-handled knives they can actually blow the blade out of the handle. The air trapped inside expands and the whole thing comes apart. That's a real failure and it's not rare.



Corn

General purpose metal polish.



Herman

Brasso on silver is more abrasive than silver polish, so it removes more silver for the same result. The Canadian Conservation Institute is explicit about that. Brasso is for brass. It's in the name and it's not a joke.



Corn

There's a hierarchy of abrasiveness and most people reach for the top of it because it's faster.



Herman

That's the whole mistake in one instinct. Faster is more metal off. Jeffrey Herman puts it better than I can. He says when removing tarnish, always invest more time using a gentle silver polish over getting quicker results with a more abrasive one. And his rule of thumb is that ninety nine percent of tarnish can be removed with just two gentle polishes.



Corn

Ninety nine percent.



Herman

With patience instead of force. Which brings us back to Daniel's mother and the toothbrush.



Corn

She was doing the right thing and she didn't have a name for why.



Corn

There's a piece of this that the chemistry doesn't cover, though. The reason people actually cared. Winterthur says tarnish isn't damaging and doesn't need to be removed before storage. Their guidance is to wait until the object is going to be displayed or used. Which means the whole ritual was never about the metal.



Herman

It was about the meal. It was about hospitality and the table and the occasion. The silver was the excuse.



Corn

You polish the silver because the good silver is coming out, and the good silver is coming out because people are coming.



Herman

That's the dying art, if anything is. Not the technique. The occasion. The reason to have the good silver at all.



Herman

One thing I'd add to the storage discussion before we run out of time. There's a specific ritual at the other end of it. Salt shakers.



Corn

I'm listening.



Herman

A silver salt shaker left full of salt will corrode, because salt accelerates the reaction. Restorers recommend cleaning them out at least twice a year, and if one has been neglected and the salt has crusted, the recommendation is a ten minute soak in ammonia to break it up. That's the one piece of silverware where the maintenance schedule is the opposite of everything else we've said. You have to keep up with it.



Corn

The salt shaker is the one piece that punishes neglect.



Herman

It is. The rest of the silver is patient with you. The salt shaker isn't.



Corn

There's something about the numbers here that I want to leave sitting. Uggerud's point about chemical polishing is that we're talking about a few layers of atoms, and there's plenty to spare. So the loss per polish is tiny.



Herman

It is tiny.



Corn

But the accumulation isn't. And Montpelier, with a one per year policy on a collection that people actually care about, tells you where the professionals put the line.



Herman

A few atoms a year, over two hundred years on a piece that's handled and displayed, is a visible amount of metal. Visible in the silhouette.



Corn

The object changes shape. Slowly.



Herman

The hallmarks get shallower. The engraving loses its edge. The plate thins. The object is still there and it's measurably less of itself.



Corn

That's what we're doing when we make it shine.



Hilbert

The word I'd argue with is maintenance.



Hilbert

You've both been saying maintain the silver, maintain the brass. Maintenance is what you do to a boiler. What my aunt did to her mother's candlesticks was a haircut, and she did it every Friday afternoon, and by the time I was old enough to notice, the candlesticks had lost the pattern on one side.



Corn

Every Friday.



Hilbert

Every Friday, on the pretext that company might come. She had a cupboard in Tel Aviv that had four cups in it. Nobody was coming. But the cloth came out, and the Wright's came out, and she did the candlesticks and the tray and the little dish that held the matches. And the pattern on the candlesticks, which had been quite deep, the leaves and the vines, by the end it was a suggestion. You could see it if the light was right.



Corn

She polished the detail off.



Hilbert

She polished the detail off. Took about fifteen years. Nobody minded, it was her mother's, it was hers. But the thing about a pattern on silver is it's not just decoration. It's the depth. The reason you can see it in a dim room is the shadow sits in the line. Take the line away, you've taken the shadow away, and now you've got a smooth candle holder that used to have vines on it.



Corn

She wasn't maintaining it. She was eroding it, on a schedule, as an act of care.



Hilbert

You can't tell her she was wrong, because she wasn't. It was her house, her cupboard, her Friday.



Herman

The interesting thing is that she had no way of knowing. The cloth was not visibly taking anything off.



Hilbert

The cloth was black. She knew she was taking something off. She thought the black was the dirt.



Herman

The black was the silver sulphide. And a little bit of silver with it, every time.



Hilbert

Every time. I have one thing left from that cupboard. A spoon, mismatched, from a set she broke up. I keep it in a drawer, and I don't polish it, and it's black, and I've decided I prefer it that way.



Corn

That's the whole episode, Hilbert.



Hilbert

It's a spoon, Corn. It's not a manifesto. I'm just not going to spend Friday afternoon on it.



Corn

Which is the point that I want to sit with for a second, because I think the research supports it in a way that's slightly uncomfortable. Winterthur's actual guidance is wait to polish until the object will be displayed or used. Wait until there's a reason.



Herman

Until the table is set. Until somebody's coming.



Corn

Which means the correct frequency is not once a year, and not never. It's when the object is going to be looked at. Everything else is friction for its own sake.



Herman

Which puts Daniel's mother in exactly the right category. She was polishing before the holiday because the holiday was the reason. Not because it was a Tuesday.



Corn

The honest answer to the Dremel question is a qualified no, and the honest answer to what she was doing is a qualified yes.



Herman

She was doing the correct thing at the correct interval with the wrong tools and no theory, which is how most skilled things actually get done.



Corn

The Dremel is the correct tool pointed at the wrong object, which is how most damage actually gets done.



Herman

That's the pairing. A slow person with a rough tool beats a fast person with a good one, if the goal is to still have the object.



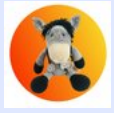
Corn

The takeaway is not don't polish. It's polish when there's a reason, and understand that every stroke is spending something.



Corn

The thing I keep circling back to is that the tarnish isn't the damage. The shine isn't the asset. We've been trained by advertising to read a black piece of silver as neglected and a bright piece as loved, and the chemistry says the opposite. The black is a record of time passing, and it's harmless, and the polishing is what costs you.



Herman

Once you see it that way, the question of how often to polish becomes a values question, not a technical one. What do you want the object to be? A thing that looks new, or a thing that is old?



Corn

Which is the question underneath the whole episode, and I don't think there's a single right answer. But I do think a lot of people are answering it without knowing they're being asked.



Herman

Which is a good place to leave it. Thanks to Hilbert Flumingtop for producing.



Corn

This has been My Weird Prompts. If you enjoyed this one, leave us a review wherever you get your podcasts. It helps other listeners find the show.



Herman

We'll be back soon.