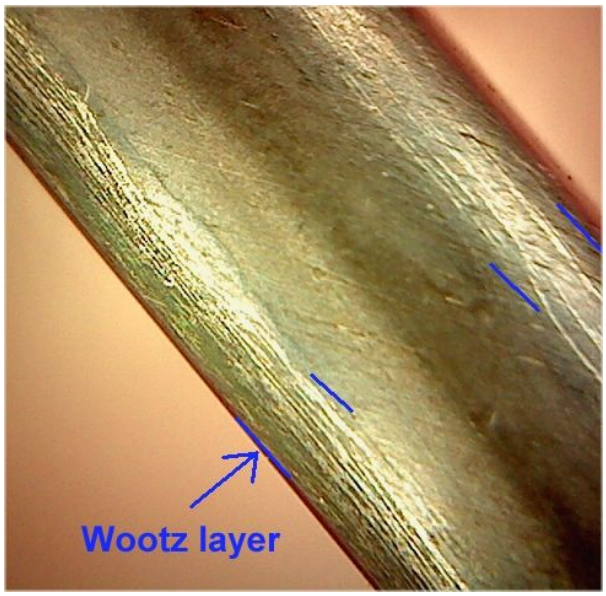
Fake Wootz?

- Is there such a thing as a faked wootz blade? After all, only a handful of present-day smiths are able to forge a blade with a nice wootz pattern and I'm not even sure if anyone presently (Jan. 2018) could come up with a kirk nardaben pattern. All of those smiths are decent people and skilled craftsmen who wouldn't dream of ever using their skills to fake an old wootz blade with the aim to deceive trusty collectors.
  Not to mention that authentic wootz blades are typically cheaper than what they would have to charge for their rather involved labor. There would be no profit in it.
  - So no faked wootz. At least no wootz swords fakes in *modern* times. How about *old* fakes? Shouldn't exist either for the same reasons I have given above. You can't really fake the pattern. I'm not counting the clumsy attempts of faking wootz found on occasion, where jokers tried to produce something *looking* like wootz by etching some curlicues into steel or by painting a pattern on a blade.
- So it came as a big surprise to me that my two 19th century wootz blades might actually be called "faked wootz"!

There are only thin layers of real wootz on both sides of a non-wootz blade!

- Here is a picture showing this for the blade shown here:



Back of the tulwar showing the laminated structure

Photographed 2017

- The back of this blade was polished and etched in Nital. The center region does not show any structure (the magnification is too low to reveal grain boundaries etc.). On bot sides we see the layered structure of the cementite precipitates that produce the "water pattern" of wootz.
  You can't produce great microscope pictures from a curved surface like the back of a tulwar. You see far more looking into the microscope than what can be captured one single picture. So just believe me! This is a laminated structure. Same thing for another tulwar that also exhibited areas with no wootz on small parts of the blade.
  This is reminiscent of pattern-welded swords with the pattern provided by a kind of veneer on both sides.
- We need to answer two questions:

1. Is this really "fake" wootz?
2. How was it made?

Question 1 has a simple answer. If the buyer of this sword was made to believe that it was made *completely* from wootz steel, the sword is a fake. However, it is not a bad fake. The outside, providing for the treasured water pattern, does consist of real wootz. The edge of the sword is thus from real wootz, too, having the potential of being very sharp. And as long as the inside consisted of a halfway decent steel, a compound sword like this one is for almost sure better (less brittle) than a full-wootz blade.
This sword actually resembles the Japanese katana: Hard but somewhat brittle outside and edge, softer and tensile inside.
If the buyer of the blade was aware of this, then no faking was involved.

*Question 2*does not have a simple answer. Let's run through the options:

- Making blade-shaped thin wootz layers and welding them to a normal steel blade does not seem to be a possibility. Not only would it be difficult to make those layers; the fire welding at high temperatures would tend to destroy the wootz pattern. Maybe it can be retrieved by some suitable temperature cycles but I have my doubts.
- Making it the Japanese way might work. Put a core of normal steel into a piece of wootz steel, and forge the compound to a blade as shown here. You must, however. do that at low temperatures etc., as required for wootz (read the relevant chapters!). If this works only an experienced smith can tell or find out by experiment.
- "Carburizing" the outside of a medium-carbon steel blade to carbon levels required for wootz might produce a suitable layered blank that then is forged into the blade. While I have pointed out repeatedly that there is no such thing as bulk carburizing in the hearth of a smith, it can be done and has been done in special facilities. The key word is "cementation", and this process was well known in the 19th century when my wootz swords where made. I'm not sure, however, if you can get the required really high carbon concentration, and my friend John D. Verhoeven would point out that just having high carbon concentration is not enough for getting a nice wootz pattern anyway.
- It's done in some other way I can't conceive.

I'll vote for the second option, the "Japanese way". I wouldn't bet much money on that however

Why are there "blank spots" - areas showing no water pattern on my swords? They are on the backside part of the "yalman", the broadened part near the tip with a cutting edge. It looks like the yalman of my sword was made as an afterthought, by just flattening out the back. The wootz layer was then stretched too thin close to the backward edge and after grinding everything to smoothness, came off on some parts close to the edge.

I've said it before: if in doubt, listen to the smiths! I asked **Jeff Pringle**, one of the few contemporary smiths who can "do" wootz; and he told me that he knew about this thing. To quote him: "I'm pretty sure what was going on is once the indigenous wootz making got wiped out by cheap Sheffield steel in the colonial era, cutlers and smiths would take an old, worn out sword and laminate it to a piece of regular steel to bulk up the material enough to get a new sword". But he knows more: "I do have a ingot that was forged out, cut in half then re-welded with a third piece in the middle". This is in the direction of the "Japanese way<" as lined out above.

Whatever. What always amazes me is what those old smiths could do rather routinely, it seems. Forging a true wootz sword is not easy, and forging the kind of laminated or compound structure discussed here isn't easy either. In deference to their skills I now proclaim: Those swords are *not* faked wootz, they are masterpieces of the smiths art!