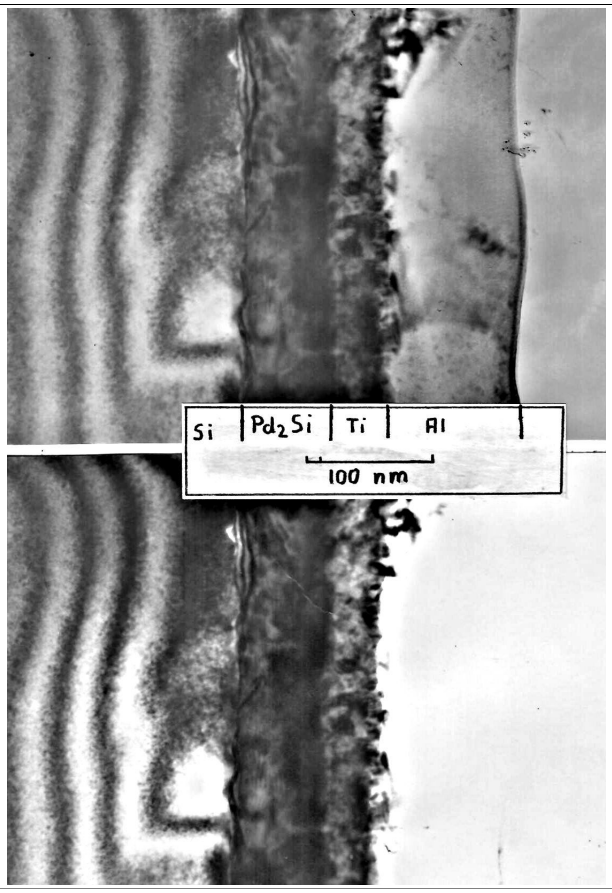
1. Introduction

1.1 Why Oh Why?

1.1.1. What it is all about

When I worked on the Hyperscript "Iron. Steel and Swords" I run across some "old" literature (from around 1930, say) containing very interesting metallographic studies of old swords. Unfortunately, the pictures in the papers as found in the Net typically no longer contained much information. They had faded to some grayish smears.
The reasons for that are clear. Some hard-working soul, after much specimen preparation and surface treatments, had finally produced a clear picture in some microscope (a "**micrograph**"). The photographic negative (an "analog" thing) contained many megabytes (***MB***) of information. In other words: In a dark room you could print it onto poster-sized photographic paper hat still looked crisp and contained a whole range of grey levels between pitch black and brilliant white.

- However, as soon as a negative got printed on photographic paper, a lot of information was unavoidably lost. If you could distinguish some 100 grey levels on the negative, you now had at best some 20 on paper. In other words, formerly distinguishable grey levels are now lumped together to just one. Here is an example:



Information loss from negative to paper.
Same negative, printed on "soft" (top) and "hard (bottom) photographic paper

Now you publish your research. No printed journal can accept poster-sized pictures; you have to cut down the size, often to just credit-card size. Of course, you loose a lot of information this way. Since journals are not printed on high-quality paper with high-quality printing presses, the picture as it appears in the journal is once more much worse than the original (small) photo you send in.
However: if you carefully edited your picture, the reader of the original journal might still be able to see what you want her to see.

- The journal now sits on a shelf and the paper starts to turn yellow. The ink starts to fade and the picture "ages", i.e. it looses contrast and thus quality. Eventually somebody copies it, then somebody else scans that copy and and digitizes it. What you finally see on your computer screen is a tiny fraction of the information originally contained in the negative. More often the not, what you are supposed to see is no longer there. Here is an example

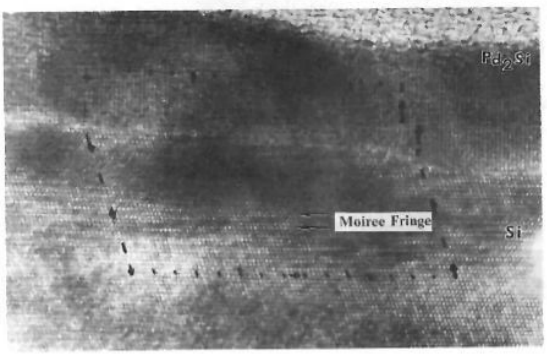
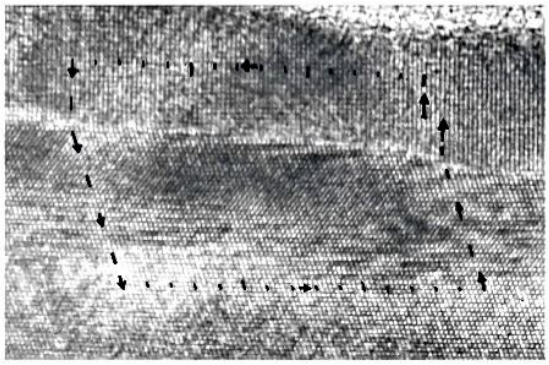


FIG. 2. Lattice image of the Pd_2Si-Si interface. The spacing of the Si {111} fringes (e.g., parallel to the interface) is 0.31 nm. A Burgers-like circuit is drawn in, showing 79 Pd_2Si {2240} fringes for 75 Si {111} fringes.



Information loss from paper to journal.
Top: Appearance in original journal; about actual size.
Bottom: Actual paper print supplied to journal
Here are more pictures from this example

That's it. Tough luck. It's all over now, because:

The negative is gone

- The scientist who produced the original negative, very likely had tossed it out long ago. Same for large high quality paper prints. Gone.
  I know that because it's what I'm just doing. Throwing the few micrographs I still have into the garbage bin. The negatives I have thrown out long ago,.
- Of course, if we do not consider science but literature, most everything that some minor writer had put on paper will be preserved for eternity in some archive for literature, down to the last little yellow sticker with the shopping list on it.

In contrast, parts of original science work has gone forever. For most of these artifacts it will not be a big loss - but then, you never know. Imagine the historians in the distant future who try to reconstruct how the science / technology explosion in the 20th / 21st century took place in detail. What kind of artifacts would they like to have?

- Actuality, you don't have to look into the future. Try to figure out now how ancient cultures produced their technological marvels. from the written materials they left and you will be quite frustrated since there is nothing whatsoever. That is true for the Egyptian pyramids, the Greek “machine form Antikythera”, most of Roman technology, the forging of an early wootz sword in India and so on and so forth.

Thanks to science we now have the Internet and other magical things based on ."chips". Already today (2022) we might not be able to reconstruct in detail how the microchips evolved that made all that possible, but we do have and use all these things anyway. By common consent the Internet is the place to store all the junk you can come up with in a digital format. While there is a lot of good stuff in the Net, the bulk is less interesting then the least interesting micrograph of a good publication.
Bearing this in mind I decided to use the Net as an archive for some of my science "pictures". That means mostly micrographs from electron microscopes plus a few from light microscopes. In order not to overwhelm you, I promise not to put any private pictures in the Net. I will, however, make the occasional comment about working as a scientist among other scientists and humanoids that weren't.

- Look at it or don't; it's all the same to me.

Just for information: My archive is not all I put into the Net. There are several large "hyperscripts" or e-books as one would call them today, and these hyperscripts are actually used by many. More to that in another module

Who dunnit?

Here are the links to the relevant information:

1. CV Prof. Dr. Helmut Föll
2. List of publications