



An Interview with Prof. Ernst Schaumann

Conducted by Robin Padilla (27.07.2012)



Prof. Ernst Schaumann (Ret.)
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RP: How did you first get involved with Houben-Weyl/Science of Synthesis?

ES: It was in the early 1970s when I was at the University of Hamburg. At that time they were in the process of finalizing the sections on functional groups and I was asked to write a chapter on the transformations of alcohols. I felt flattered and honored, ran to the library, and started to write it. I finished it very soon but then I found out I was the only author on the volume who was so fast! <laughs> About ten years later I was asked to rewrite the chapter and add new material. At that time, I had the choice of dropping the whole thing but I felt obliged to stick with it. I recently heard the phrase "you only fail if you don't start". Well, I started this thing and finished it and I think I did a good job at the end.

In the mid-1980s there was a bit of a crisis concerning the E-Volumes (Houben-Weyl Updates) which had started to come out and there was only slow progress in the sections on heterocycles. They decided they needed somebody to help with these volumes and with my history they thought it might be me. The head of Thieme Chemistry, Hans Padeken, asked me and I was again flattered and agreed. I was involved in these volumes and several others. It has been an ever growing story and I've been on the editorial board for about 25 years now.

RP: What do you think are some of the biggest scientific challenges of today and also of tomorrow?

ES: I'm convinced organic synthesis is not finished and this challenge goes on. We have a vast amount of experience, materials, and knowledge but if you think about specific transformations of molecules you rapidly run into problems. It may be a

problem of principle; that there is no method to do something in one step, or the pathway is too complicated/expensive, the reagents are weird, etc. Organic synthesis has to advance in two directions. One is the need for more and better methods and the other is to simplify the old methods. Also, with the idea of the environment, we have lots of very toxic things and we also create toxic waste, less so now because we have been working on that but there is still a long way to go. In *Science of Synthesis* for example, we always mention the toxicity of certain reagents.

RP: What are some of your own favorite personal discoveries and why?

ES: We have worked on thiocarbonyl compounds for a long time and this is a problem of bad odor and handling sensitive materials. We developed a one-pot method where you create these compounds in solution in an elegant way and can use these sensitive compounds right away. The other main advance was our work on domino reactions, where we used silicon rearrangements and Brook rearrangements. I'm glad this method is now used by many people in natural product synthesis.

RP: What is your dream reaction?

ES: C—H functionalization, the reaction of non-activated bonds, is a dream reaction of many people. When I was in the U.S. for the first time in 1970, I visited Ronald Breslow and back then it was also a dream. It still is a dream to make our reactions better than an enzyme. Out of cleverness and with our experience to be better than the evolution of 3 billion years would be a *real* dream! <laughs>

RP: Do you have any advice for current and aspiring researchers?

ES: Don't give up organic synthesis, look at *Science of Synthesis* and see what's there! See all the gaps, see the possibilities, see that there is a wonderful playground with many applications waiting. Go out and just do it!

RP: What kind of hobbies and interests do you have outside of the lab?

ES: I'm a birder, I study history, and I do one very old fashioned thing, and that is stamp collecting. In contrast, many other boys of my age gave up collecting stamps at age 14 but I restarted at the end of the my Ph.D. work. I found it was a good way to calm down.

RP: Is there anything else you'd like to add?

ES: To me *Science of Synthesis* is very focused on the scientific community. I have some colleagues who say "I don't write secondary literature" but of course we all use secondary literature! I think we all have to do our share. I have done my part and it was worth it for me!