Author's Introductory Comment

This is a book in two parts. Part One provides a concise history of silver halide photography, centering on the five major coaters of photographic materials. It should be of interest to everyone who has ever used a camera or now takes photographs with their smartphone. Part Two is a very different kind of historical record. It deals factually and intimately with the life cycle of one of the smaller producers of photographic film or paper. There were more than 50 of those. A major part of it is my personal story. Part of it is written in Dutch. Part Two in its entirety is written for perhaps only about 25 people, people who are fluent in both English and Dutch and have some personal connection with that coating facility in Soestduinen. Many more people are dealt with, but most of them have passed away.

Anyone reading Part One will find it to be a fairly complete, concise and well written account of silver halide photography. Anyone other than the 25 people for whom I wrote Part Two will scan Part Two and wonder why two such totally different types of historical reporting would be combined in one publication, one reasonably well written and the other a strange combination of major issues and all sorts of incidental stuff. The answer is that the two accounts are very much interrelated for those 25 people for whom I have undertaken this project.

The chemical photographic system, and the photographic industry, has its origin with the experiments by Louis Jacques Mandé Daguerre to make a permanent silver chloride image. The daguerreotype system was commercialized in France in 1839 and was exploited in much of Europe, in America and in Japan within a year. The light sensitivity of silver chloride had been well known for more than 20 years before Daguerre's critical discovery of a way to make the image permanent. That was based on the 1816 discovery by Nicéphore Niépce of the light sensitivity of silver halide and efforts by others in England to stabilize the image.

That discovery led to the multibillion dollar photographic industry based on the light sensitivity of silver halides. By 1910 there were photographic film manufacturing facilities in all of the more developed nations. In the twentieth century the industry was dominated by Eastman Kodak, but Agfa in Germany, Gevaert in Belgium, then Fuji in Japan and Polaroid in the U.S. had substantial shares in their home markets in the dramatically growing markets for photographic materials for amateur and professional photographers and for a broad assortment of films for industrial and medical imaging applications.

In the 1970's, while growth in the demand for photographic materials was leading to investment in more production capacity, it started to become apparent that at some point the chemical system would be superseded by some sort of digital imaging systems. Industry leaders increasingly wondered how long it would take for a transition to occur and how rapid it would be.

A digital camera was invented by an Eastman Kodak researcher in 1975, but technological barriers and the cost of storing data appeared to be major issues that would delay commercialization of digital imaging systems for at least 15 years. In the 1990's very expensive digital cameras were marketed, then better and cheaper versions were available, then hand held mobile telephones with camera capabilities became ubiquitous, and by 2005

silver halide photography had become a specialty and everyone was taking digital photos with advanced digital cameras, inexpensive digital cameras and their pocket smartphones. There is no serious debate about the 1839 date for commercialization of silver halide photography, but there is no agreement about when we should consider it to have been effectively superseded by digital photography. I have, somewhat arbitrarily but with a lot of thought and industry data, designated 2005 as the year when digital had truly replaced chemical photographic systems for almost all major applications; a life cycle of 166 years.

In 1900 there were about ten production facilities for making the light sensitive solutions and coating them on large rolls that were then cut to consumer sizes. By 1975 there were perhaps 50 producers of silver halide photographic materials, dominated by Kodak, Polaroid, Agfa and Fuji, and some of them had production facilities in multiple locations. In 2024 there were only a few facilities producing commercial quantities of silver halide products for dedicated and aging professional photographers, hobbyists, and for residual industrial and medical needs. Almost all of the great many production facilities have been shut down and the sites have been cleared of heavy metal contamination and other industrial wastes. For each of those facilities there is a life cycle story.

I worked in the photographic industry from 1953 until 2002. From 1971 until 1995 I was manager of one of the many smaller film coating operations, one that was established in Soestduinen in the Netherlands in 1922 and shut down in 1999. My telling of the story of that operation is presented as the second portion of this book. I have written the history of that facility, during the first 16 years known as Photax NV, in Dutch for the periods when the local language was essentially the only language used there. For later periods I have written my story in English. For the period after I joined the company in 1971 it is essentially a personal memoir with a great many of my photographs. I wanted to make it a fairly complete historical record of that company based on the information that I had and my recollections, but I had no access to the company records and files in Soestduinen which I assume were destroyed in 1999 or soon thereafter. Many of my former colleagues who certainly would have found my account to be very interesting are no longer alive. With regard to many of the details, it is a story written for a very small audience, but as a case study of the successes and tribulations of a small company in the photographic industry in the twentieth century it is a valuable historical record. It is a case study of an impressive success story that ended badly.

There were more than fifty photographic coating facilities with a somewhat similar life cycle, created as photography grew in popularity. Some coated only one or two layer black and white papers. Most of them coated black and white film for amateur, professional, medical X-ray, graphic arts and a broad array of industrial applications. Only seven film producers coated commercially successful color films, typically with 17 or more layers. Several others attempted to enter that very high margin market but failed to master the complex emulsion formulation and coating technologies. Only two of the producers of quality color film survived. Fuji not only survived, but remained prosperous through the decline of their core business. Kodak survived but struggled through the transition and is only a shadow of the firm that dominated the industry for a century. Both are excellent case studies.

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From Daguerre to Digital

The Life Cycle of Silver Halide Photography

1839 to 2005

The story of one of the many small companies
that produced photographic products:

Photax, Dalco, Chemco, Polychrome, Kodak in Soestduinen: de Levensloop 1922 to 1999

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