

early and were not questioned when the project hit problems: "Generally, the development of nylon proceeded in a systematic and orderly way". In the book, the "nylon model" is described in painstaking detail, covering three phases of development: commercial feasibility of the new fibre; the practicability of producing high-quality yarn to compete with silk for fully fashioned hosiery; and the reproducibility of this yarn on a very large scale.

Du Pont launched its yarn in 1938 with the claim that "from such common raw materials as coal, water and air, nylon can be fashioned into filaments as strong as steel . . .". This inspired the *New York Times* headline, "New hosiery as strong as steel", and ideas that such stockings would never wear out. Soon it was also inspiring hucksters to sell silk stockings as nylons, surely the hallmark of success for the project.

But Du Pont failed to apply the "nylon model" to Corfam, a man-made alternative to shoe leather, a goal from the second decade of corporate research and development which was realized in 1949 with the discovery of a new approach to porous non-woven fabrics. Over the next five years three different departments spent over \$2 million trying to develop nylon-based compositions before the company ruled that one alone should carry the development forward.

In 1958, the department came up with a new material based on Dacron, another Du Pont invention. It was a composite structure consisting of a non-woven Dacron substrate with a porous polyurethane binder and a porous outer coating. Four years later the company distributed 15,000 pairs of Corfam shoes for 'clinical trials'. Complaints were sufficiently few to encourage the idea that, as with nylon, it had a product superior to the natural one. It was unaffected by moisture, weighed one-third less, kept its lustre and did not need to be broken in.

Corfam came to the market in 1964, 15 years after the original invention, but still saddled with an "overly complicated" manufacturing process that obliged the company to compete in the market for top-quality shoes. Although 45 million pairs of Corfam shoes were sold in the United States over the next five years, the material failed to show a profit. During this period imports of real leather shoes were rising rapidly, forcing Corfam to compete downmarket. When it was finally abandoned, the material had accumulated venture losses of about \$70 million. Corfam, once heralded as a new nylon, became known as Du Pont's Edsel, with little evidence that the hard-won lessons of the "nylon model" were ever seriously applied. □

David Fishlock is Science Editor of the *Financial Times*.

Out of focus

Roger Taylor

The History of Photography Vol. II. The Rise of Photography 1850–1880: The Age of Collodion. By Helmut Gernsheim. *Thames & Hudson: 1989. Pp.285. £40, \$65.*

IN 1939 some notable books on photographic history were published, their appearance being primarily due to the centenary of photography's announcement. Fifty years later, as we celebrate the 150th anniversary, another surge of publishing is underway to mark the event.

During the intervening years there has been a great change in the status of photographic history. Gradually it has emerged from being a marginal subject pursued by a few, and has entered with force and vigour into cultural life generally. That transformation was marked by a number of events, none more important than the publication of *The History of Photography* by Helmut and Alison Gernsheim, first in 1955 and then in enlarged and revised form in 1969. This second edition became the standard reference work for everyone interested in the subject.

As the research of other photographic historians began to accumulate, however, there was a realization that the Gernsheim's text was often based upon secondary sources and the reminiscences of others. Implicitly this was always recognized to be the case, and was accepted—it would have been impossible to assemble such a comprehensive volume and substantiate every fact and detail through primary research. Now we have the completion of the third edition of their work, which has been published in two volumes. The first, *The Origins of Photography*, appeared in 1983. The second, reviewed here, deals with the period 1850–1880, "The Age of Collodion".

During the 20 years between editions, the pace of research on photographic history has accelerated, and there have been countless books and articles shedding new light and correcting former mistakes. Historians have concentrated upon specific individuals, processes or aesthetic movements to enrich our understanding of the development of photography through the years. In both volumes of this new edition, one is aware of Gernsheim's selective interpretation of the fresh historical evidence. In some cases the very absence of such information, even though it is readily available, is something of a shock.

The example of Gustav Le Gray will illustrate the point. Le Gray was an important mid-nineteenth-century photographer whose impressive seascapes have consistently been admired. His technical

achievements have been debated widely by photographic historians, with the discussion centring on his ability to harness technique in the service of art. In her monograph *The Photography of Gustav Le Gray*, published by University of Chicago Press in 1987, Eugenia Parry Janis describes all his working methods and refers in detail to the various devices he used to achieve results. Gernsheim does not even mention this publication; instead he refers to a much earlier article from 1980, which he selectively quotes from in order to support his original views on Le Gray's techniques, as related in the second edition.

This lack of precision leads to confusion and a compounding of the problem about the very nature of photographic history. It is a truism that an error repeated frequently enough transforms itself into a fact. The latest victim to fall foul of this is Asa Briggs in his book *Victorian Things* (Batsford, 1988), which inevitably has photography as one of its themes. Much of the information and interpretation has been taken from secondary sources, including *The History of Photography*, and repeated within a different context. The text is littered with errors, but stated so convincingly that they are credible. No doubt, in time, Briggs will be quoted as a source and the mythology of history will become woven more intricately than ever.

My criticisms of *The History of Photography* extend, I fear, beyond the text to the illustrations. Photographs are used in many ways. Most frequently they present the visual evidence of the past, a tangible record of existence, which places them in the role where content is all important. In a book dealing with the history of photography it is vital to treat the photographs both as object and subject, and respect their original context and integrity. So it is a great pity that in Gernsheim's book the photographs have been cropped and altered to fit the designer's ideals; for example photographs that were originally vertical now appear as square or horizontal, a fact made all the more puzzling by the inclusion of note of the original dimensions.

Sadly, Gernsheim and his publisher have missed the opportunity to revise a seminal yet preliminary account into a modern work of reference. Other photographic histories, monographs and articles must now fulfil that role. □

Roger Taylor is Senior Curator of Photography at the National Museum of Photography, Film and Television, Prince's View, Bradford BD5 0TR, UK.

● Academic Press has published the third volume (out of a projected four) of *Geomagnetism*, edited by J. A. Jacobs. The book contains seven chapters, which are divided in subject matter between the Earth's main magnetic field and aeronomy. Price is \$130, £65. Volumes 1 and 2 were reviewed in *Nature* 332, 596 (1987).