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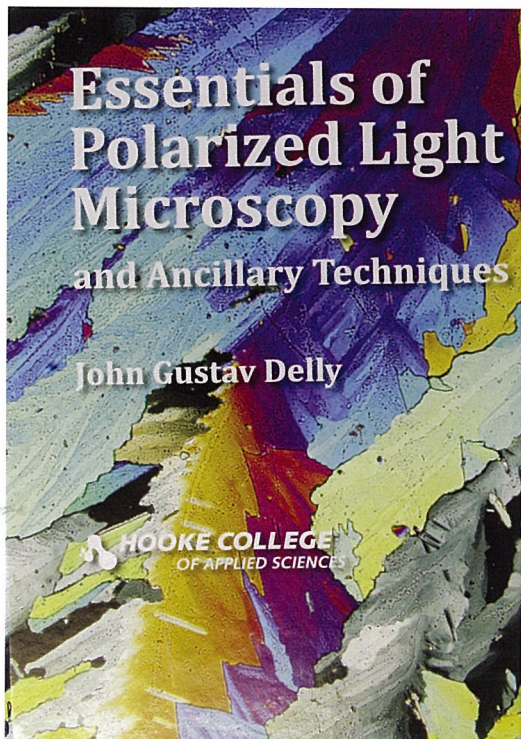
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Book Review

Essentials of Polarized Light Microscopy

John Gustav Delly. Hooke College of Applied Sciences LLC, Illinois (2017). Hb; 601pp. ISBN: 978-0-692-97947-1. Price £240 plus postage; available from Amazon and McCrone Associates, Westmont, Illinois (www.mccrone.com).

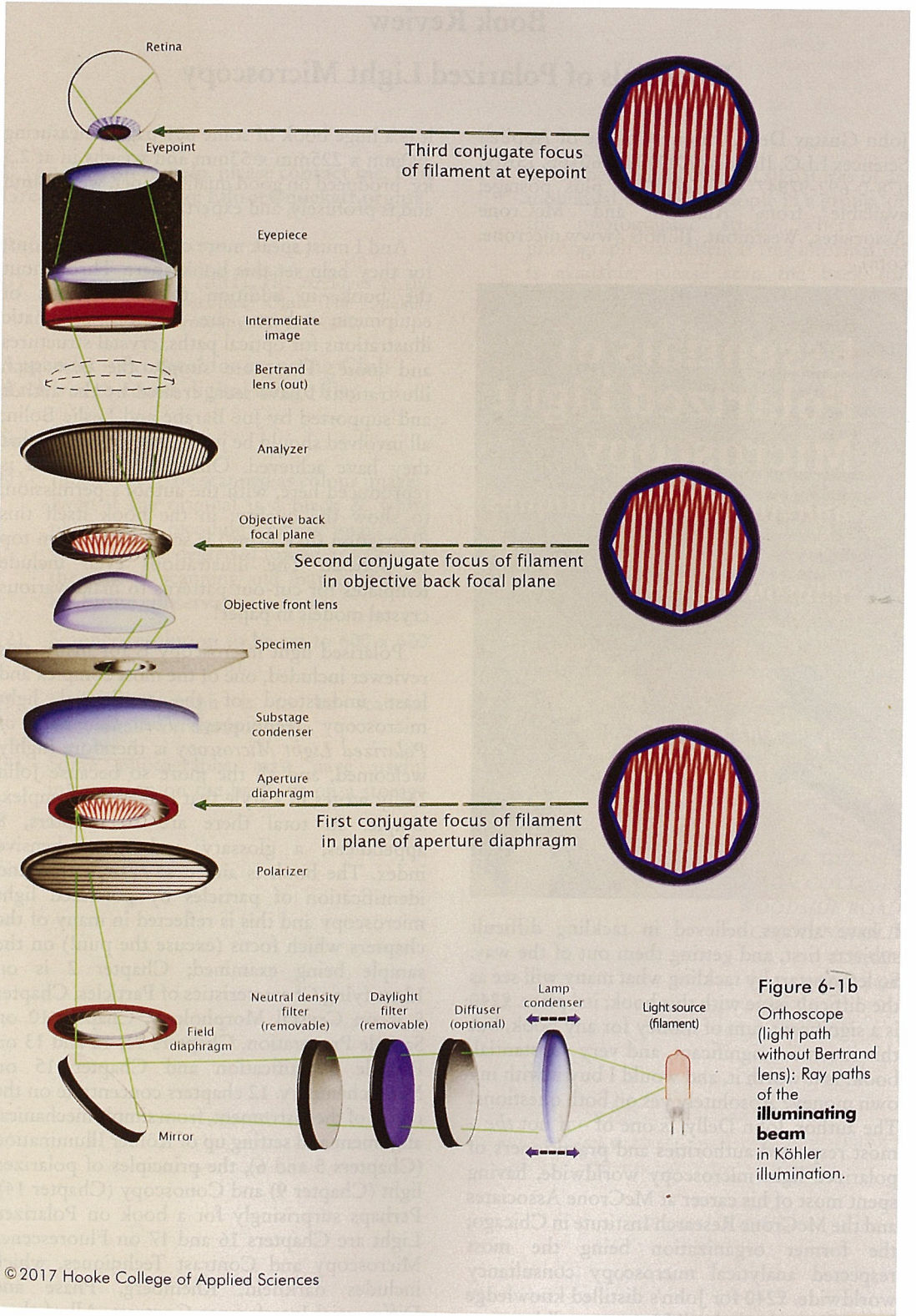


I have always believed in tackling difficult subjects first, and getting them out of the way. So let me start by tackling what many will see as the difficult issue with this book; its' price. £240 is a significant sum of money for any book, but this is a most significant, and very substantial, book. Is it worth it, and would I buy it with my own money? Absolutely yes on both questions! The author, John Delly, is one of – if not *the* – most respected authorities and practitioners of polarized light microscopy worldwide, having spent most of his career at McCrone Associates and the McCrone Research Institute in Chicago; the former organization being the most respected analytical microscopy consultancy worldwide. £240 for John's distilled knowledge is excellent value indeed! In more tangible terms,

it is a huge book of some 601 pages, measuring 290mm x 225mm x 53mm and weighs in at 2.3 kg, produced on good quality paper, well bound and is profusely, and expertly, illustrated.

And I must speak more of those illustrations, for they help set this book apart. Throughout the book, in addition to photographs of equipment, there are many schematic illustrations for optical paths, crystal structures and more. These are simply the best such illustrations I have seen, created by the author and supported by Joe Barabe and Leslie Bolin; all involved should be justifiably proud of what they have achieved. One such illustration is reproduced here, with the author's permission, to show the quality; in the book itself this illustration (like many) is some 22cm from top to bottom. The illustrations even include templates for cut-out patterns to make various crystal models in paper!

Polarised light microscopy is for many, this reviewer included, one of the most complex and least understood of the traditional light microscopy techniques. *The Essentials of Polarized Light Microscopy* is therefore highly welcomed, and all the more so because John Delly writes in a style that makes the complex, simple. In total there are 20 chapters, 8 appendices, a glossary and comprehensive index. The book is aimed at examination and identification of particles by polarized light microscopy and this is reflected in many of the chapters which focus (excuse the pun!) on the sample being examined; Chapter 2 is on Identifying Characteristics of Particles, Chapter 8 is on Crystal Morphology, Chapter 10 on Sample Preparation, Chapters 11, 12 and 13 on Particle Identification and Chapter 15 on Microchemistry. 12 chapters concentrate on the optics of the instrument, from simple mechanical alignment and setting up of Köhler Illumination (Chapters 5 and 6), the principles of polarized light (Chapter 9) and Conoscopy (Chapter 14). Perhaps surprisingly for a book on Polarized Light are Chapters 16 and 17 on Fluorescence Microscopy and Contrast Techniques, which includes darkfield, Rheinberg, Phase and Differential Interference Contrast. All of these



are techniques used in the identification of particles, and it is a bonus that they are included here.

Again I must comment on John Delly's experience and style of writing. There are 'side boxes' explaining some of the history and the people behind the techniques described, there are practical 'hints' and there are detailed descriptions of the practical aspects - sample handling and slide preparation. Here we are reading the experiences of a lifetime, and one simply cannot put a value on that.

When I look at the books in my library, the 'classics' of microscopy are relatively few, and mostly old. Amongst these are Carpenter and Dallingers *The Microscope and its' Revelations*, Spitta's *Microscopy* and more recently Hartleys *The Light Microscope; Its' Use and Development* (itself now 25 years old); all are still useful today.

It is always a risk to try and predict the future, but I am confident that the *Essentials of Polarized Light Microscopy* will not be superseded for at least the next 50 years, and will remain useful for the next 100 years or more. Both the author and publisher are to be congratulated on this monumental book.

So - is this a book for the amateur, or is it written only for industrial laboratories? I have absolutely no hesitation in recommending *The Essentials of Polarized Light Microscopy* to both markets. Clearly the market has to be those industrial laboratories that perform particle analysis, but every professional and amateur microscopist who uses polarized light will benefit enormously from this book. There simply is not a better - or easier to understand - book on the subject.

Phil Greaves