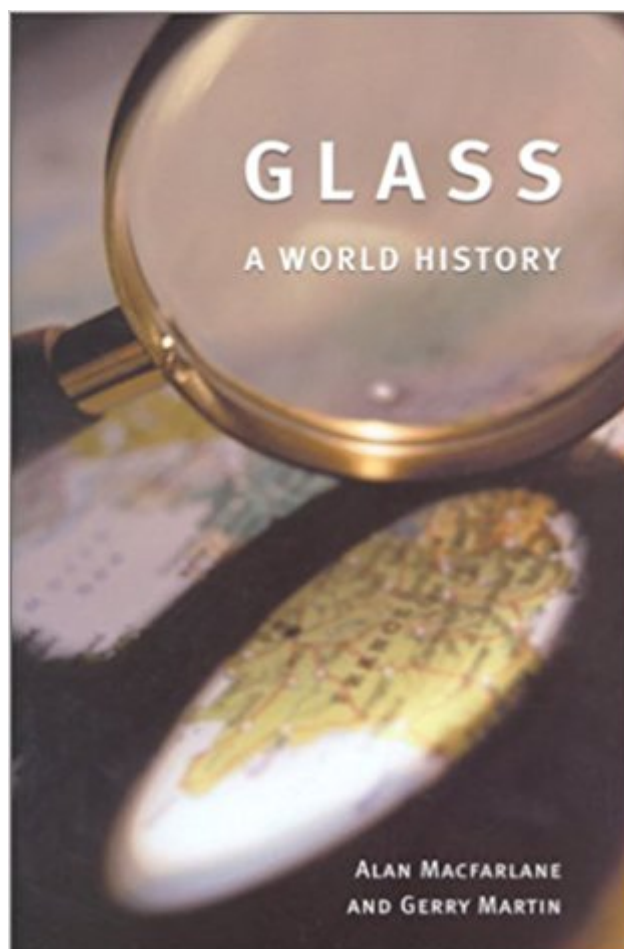


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Glass: A World History



Synopsis

Picture, if you can, a world without glass. There would be no microscopes or telescopes, no sciences of microbiology or astronomy. People with poor vision would grope in the shadows, and planes, cars, and even electricity probably wouldn't exist. Artists would draw without the benefit of three-dimensional perspective, and ships would still be steered by what stars navigators could see through the naked eye. In *Glass: A World History*, Alan Macfarlane and Gerry Martin tell the fascinating story of how glass has revolutionized the way we see ourselves and the world around us. Starting ten thousand years ago with its invention in the Near East, Macfarlane and Martin trace the history of glass and its uses from the ancient civilizations of India, China, and Rome through western Europe during the Renaissance, Enlightenment, and Industrial Revolution, and finally up to the present day. The authors argue that glass played a key role not just in transforming humanity's relationship with the natural world, but also in the divergent courses of Eastern and Western civilizations. While all the societies that used glass first focused on its beauty in jewelry and other ornaments, and some later made it into bottles and other containers, only western Europeans further developed the use of glass for precise optics, mirrors, and windows. These technological innovations in glass, in turn, provided the foundations for European domination of the world in the several centuries following the Scientific Revolution. Clear, compelling, and quite provocative, *Glass* is an amazing biography of an equally amazing subject, a subject that has been central to every aspect of human history, from art and science to technology and medicine.

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Customer Reviews

Imagine a world without glass: no light bulbs, no windshields, no telescopes, no computer screens, and, of course, no glasses. "It is true that other substances, such as wood, bamboo, stone, and clay, can provide shelter and storage," write Alan MacFarlane and Gerry Martin in *Glass: A World History*. "What is special about glass is that it combines these and many other practical uses with the ability to extend the most potent of our senses, sight, and the most formidable of human organs, the brain." As a piece of technology, however, glass has received almost no previous attention. Nobody knows who invented it, though the ancient Egyptians or Mesopotamians are the likeliest candidates. It wasn't until Europe's early Renaissance, however, that glass was used for something more than mere jewelry and ceramics. It played a vital role in the growth of Western science, marking a key difference between European civilization and civilization everywhere else. "The invention of spectacles [in the 13th century] increased the intellectual life of professional workers by fifteen years or more," say the authors--a development of enormous economic and cultural importance that contributed to "the foundations for European domination over the whole world during the next centuries." This is a bold and beguiling thesis, and it's a wonder that it took until now for somebody to think of it and articulate it so well. --John J. Miller

MacFarlane (anthropological science, Univ. of Cambridge) and Martin, a historian of glass instruments, make the case for the centrality of glass in the artistic renaissance and scientific revolution that took place in Western Europe from the 14th to 17th centuries. They discuss the origins of glass making and trace its development and usage across centuries and multiple cultures (Europe, the Middle East, China, India, and Japan). Their discussion combines cultural, artistic, and aesthetic viewpoints of glass within these cultures with history and developments in science. The result is a thoroughly readable, carefully argued work, filled with delightful surprises (such as the discussion on eyeglasses, vision, and art). An excellent example of microhistory (think Mark Kurlansky's *Cod*), this is required for history of science collections and recommended for large public and academic collections. [See also William Ellis's *Glass: From the First Mirror to Fiber Optics; The Story of the Substance That Changed the World*.-Ed.]-Michael D. Cramer, Schwarz BioSciences Inc., RTP, N.--Michael D. Cramer, Schwarz BioSciences Inc., RTP, NC Copyright 2002 Reed Business Information, Inc.

A book that's a little bit away from my usual (other than history) yet I must say if there is a book to discuss the history of glass it would be hard to imagine any other authors doing more research than

the ones for "Glass a World History." Not only is glass today so ubiquitous but when we are confronted with it it's usually transparent thus we pay even less or no thought to it. It helps to take a historical quote or two from someone's first reaction to glass to refresh our consciousness of it; "The shops are surrounded with [glass] and usually the merchandise is arranged behind it, which keeps the dust off, while displaying the goods to passers-by.." notes one very old observation. Do we ever "see" the glass in store casements and windows? No, we see merchandise. Do we ever see the glass in our windows? No, we see the view on the other side - outside or in. Do we ever see the glass that holds our wine, the glass protecting the face of our clocks and watches? Even if we complain about our eye-glasses it's not really the glass as much as the frames around them! Who thinks of the glass in microscopes, telescopes, test-tubes and beakers? We don't see the glass in the mirror but instead our focus is on the reflection. It's not the glass of the light-bulb but the light emitting from it. It's the photo behind the picture-frame, the perfume inside the glass bottle, the food in the glass jar, on and on..... Glass is all around us yet its very nature hides itself so excellently. So becoming aware of its history and effect on the human races is bound to be a curious eye-opener. For me it was a relaxing diversion from my deeper reading. One reason I choose a book of this topic is from reading other history books mentioning how Christianity was influential in establishing the glass trade "craftsmen with great technical skill.... particularly in churches" stained-glass windows, glass candle-holders and rosary beads, which in turn gave rise to science. Glass was a religious commodity making readily available glass for needed lenses for microscope, telescopes, Newton's prism, along with glass test tubes and bottles used in science and even for "spectacles" so people could better read and study. While reading this book I found the following quotes from the book might be things not enough people today "see" though is mentioned in numerous detailed history books. "the expansion of Christianity, which was...sympathetic to the study of God's law encouraged experimentation and the harnessing of new knowledge." "It is rather noticeable that all the greatest medieval scientists were churchmen." having "the curiosity and desire to understand God's laws." (Isaac Newton was another one in this category.) "England benefited from the influx of skilled refugees" (Huguenots - French Protestants) including John Dolland who "established the optical industry in the United Provinces. (History records the economic downturn of France when the highly religious and educated Huguenots left in 1685 at the revoking of the "Edict of Nantes" now banning Protestants. This was to the great advantage of the nations they fled to.) Lastly these authors (as many authors sourcing historic writings) make historical references from an abundance of written records of the religious Jesuits and Missionaries, in many cases the only recorders of history, peoples, their customs and lifestyles ever to be found.....Just for some curious side-thoughts. The

book is easy to understand and certainly offers a different perspective of what we all too soon take for granted; Glass.

GLASS: A WORLD HISTORY, Macfarlane and Martin, University of Chicago Press, 2002 What a magnificent book! What an amazing thesis! Here, artfully and clearly presented by the authors, is the idea that this taken for granted miracle substance, all around us in the current day - in the form of drinking glasses, jars and bowls, eyeglasses, mirrors, TV screens, computer monitors, camera and telescope and microscope lenses, windows, petri dishes and test tubes - is the chief driver of modernity. Yes, from its tribal discovery and development in Mesopotamia some 4,500 years ago, this translucent, moldable, durable, and highly refractive substance has transformed our world. Its reach and versatility has penetrated and enhanced all areas of our life - just think about the light bulb, and how humans now can read and write and play and do oh so many things without serious regard to dark fall. Nor does it stop with lighting. Just think about transportation (car, train, plane windows) or shelter (windows for houses and buildings). Think about optics. Think about how optics, in itself, has led to biological science and medicine (where would Louis Pasteur, and all those who came after him, be without the microscope?). Think about how optics allows people (like me!) with aging eyes to read, and for others, all manner of other optical correction (I know, I know, you'll say, today these lenses are plastic, but were it not for glass, the field of optics - involving an understanding of curvature, refraction, lens making, etc. - plastic lenses would have been much much later in the making.) Indeed, the computer upon which I type this review would not have been possible without glass. The early transistors, later integrated circuits, computer processing, monitors, the trunk lines today through which information passes, all dependant on silica based "life forms" Indeed, silica, the essential ingredient of glass (glass is SiO_2 - silicon dioxide), and its various compounds, is in everything electronic, in one form or another. And it is frankly and explicitly in the glass fiber used in high speed digital processing. Our information age would not be if not for glass. Glass magically and durably allows for the transmission of light, for the tallying of its photonic particles, and their reinterpretation into meaningful bits of information known as words or as images on the myriad screens that proliferate today in this, the Information Age. The Information Age is the Glass Age, and this is the book that gets you thinking about that, about the sweeping impact of glass on our world. And of course we are still evolving, culturally, and technologically, at break-neck speed, and glass continues to be a fundamental part of this evolution. This book is a must read for any thinking, curious person. It should be high on the list for those interested in the history or philosophy of science, the nature of technology, information processing, and cultural evolution. It

should be of interest for anyone interested in craft and the relationship of creativity and technology. It should be of interest for anyone enthralled by the beauty of glass, entranced by its colors, and the way light plays in and through it. Artists and technologists alike can take de-light in what Alan Macfarlane and Gerry Martin have to say. There was a Bronze Age, and then an Iron Age, but now, if one thinks a bit on the material presented in this seminal work, the Age of Glass spans nearly this whole time period as well. Yet, unlike bronze and iron, the importance of glass and other silica based compounds continues along, at the cutting edge, in fact, of our cultural and technological unfolding.

Disclaimer: The writer of this review, Harlan Simon of harlanglass.com, is an avowed and self-confessed glass-evangelist (bet you couldn't tell!). He is an amateur glass historian, and a professional jewelry designer, glassmaker, and teacher. He offers ongoing glassmaking workshops at the City of Oakland's public art studio, Studio One, which is Northern California's longest continuously running public flamework glass program. On the Web, there are numerous YouTube and Expertillage.com how-to videos depicting Harlan teaching various glass beadmaking techniques of the ancient art known as flamework. And during the summer, Harlan teaches several retreat-type glass beadmaking workshops at Feather River Art Camp near Quincy CA and at the beautiful Mendocino Art Center on the rugged Northern California coast. Harlan passionately shares the view of the authors of *Glass: A World History* (indeed learning much of it from them) of the transformative nature of glass. And he is working (slowly!) on a further development of their thesis of the pivotal, epoch-making nature of glass. Indeed, expanding upon the line of thought brought forth by Macfarlane and Martin, of the influence of glass on western art and science (realistic portrayal of a 3-D world in 2-D, the empiricism of the scientific method, etc.), Harlan is of the further view that perhaps even the concept of the "self," both in the realm of psychology as well as in modern political theory (Locke, Rousseau, French Revolution, Rights of Man, and the founding of American Democracy), can also be traced to the impact of Glass. There is a speculative idea here as well, which relates to light and mind, energy and thought, and involves questions about what the "big picture" purpose of glass is. Harlan's work concludes with some tentative answers as to what the Reign of the Age of Glass might be about and what it ultimately means for us.

It was not at all what I expected. I expected to read about a chronicle of scientific and technological advances related to the use of glass and instead I got, as promised, a world history through the lens (pun intended...also a common ploy of the authors) of glass. Very interesting and informative as it helped me see the world, particularly Eastern cultures, in a new light

When I bought the book, I was more or less expecting a history of how glass was made and the development of glass through history. I was mistaken. It is a narrative of how glass influenced history. Without glass the Renaissance and the Age of Science could not have happened. A fascinating and informative history of the world as influenced by glass.

This book has no detail to offer about early glassmaking, how it affected everyday lives of rich and poor, its effects on trade and culture . . . It doesn't even say what glass is. The authors are interested in linking glass to a few well established themes of Western Civilization courses, such as the rise of the individual and the scientific revolution. Example: Is it coincidence that the great scientific minds of the medieval period were all men of the church, which for the last few centuries had been using a lot of stained glass? (The authors acknowledge that the church monopoly on higher education may help to explain this astonishing coincidence.) The discussion seems never to get beyond a few supporting quotations, and a cavalcade of disclaimers. For a good history of glass, we may have to wait for Henry Petroski (Evolution of Useful Things) to write one.

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