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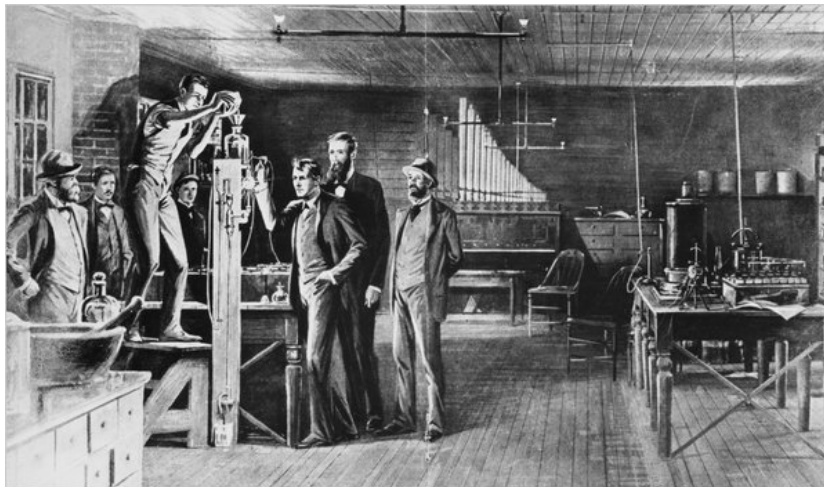
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BOOKS ON SCIENCE

Let There Be Dimmers on Our Glowing Planet



Getty Images

SEEING CLEARLY Thomas Edison, third from right, in his lab in Menlo Park, N.J. City lights came to define the very idea of urbanity, Jane Brox writes.

By KATHERINE BOUTON
Published: July 26, 2010

America roared into the electric age and didn't stop to consider what it had wrought until just short of the 100th anniversary of [Thomas Edison's](#) incandescent light bulb.

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That's what Jane Brox, author of "Brilliant," argues, and she dates that realization not to the 1965 blackout that closed down most of the northeast but to [President Nixon's](#) dictum in the

wake of the 1973 energy crisis that all nonessential lighting — holiday lights, advertising, the lights of Broadway — be dimmed. "Something essential had been taken away," she writes, "something larger than sheer illumination: the assumption that we could live without thinking about energy, that we could take it all for granted."

Humans have been lighting their environment with hearths and torches for half a million years but the lamps date from no more than 40,000 years ago. Some of the earliest were found in the prehistoric caves of Lascaux, in France. The complex and lyrically beautiful paintings, dating from 18,000 years ago, were created by the light of tallow cupped in limestone.

The painters saw only a small fragment at a time of the huge and complicated panorama, which spreads over numerous chambers of the cave and uses the contours of the rock to

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create the illusion of movement. Lascaux serves as the subject for both prologue and epilogue to her book. The light at Lascaux was “as it would be for ages to come: light, its limits, and then the dark.”

Ms. Brox’s narrative is in many ways a social history, told through man’s relationship to light. In the Middle Ages cities were dark at night, residents locked into their houses. The term “curfew” dates from this period (*couvre le feu*), for the moment the lights were doused the streets became too dangerous to navigate.

By the 1700s cities were sporadically lit with whale oil lamps, kept alive by lamplighters. They tended to extinguish easily. Most were out by 9:00 or 10:00. Linkboys, bearing links, or torches, took over, hiring themselves out to pedestrians and lighting their way home. Eventually city lights came to define the very idea of urbanity, she writes. The countryside remained mostly in darkness until the Roosevelt era, when the [hydroelectric](#) projects of the Tennessee Valley Authority finally made possible the spread of electricity to rural areas.

Indoors, gaslight replaced candles or oil lamps beginning in the 1820s. Interiors were suddenly much, much brighter, but the introduction of gaslight brought with it a psychological shift.

“Gaslight divided light — and life — from its singular, self-reliant past. All was now interconnected, contingent, and intricate.” Gaslight, Ms. Brox writes, prefigured “our nets of voices, signs, and pulses, with power subject to flickers and loss we can’t do anything about.” The later chapters of “Brilliant” delve into the technology of light. Fluorescence, cold light, introduced at the 1939 World’s Fair, depends on a complicated sequence of events, which she describes clearly and concisely. The end stage involves the interaction of mercury vapor and the phosphor-coated tube containing it.

When the two interact, the result is ultraviolet light, invisible to the human eye. But the phosphor itself glows in the presence of ultraviolet light, and creates that light that we all have spent hours working or studying under. The fluorescent tube uses a quarter of the energy of the incandescent bulb and emits a quarter of the heat.

She also vividly describes the mutual dependence of the many small power stations that make up the electrical grid. A delicate balance has to be maintained — for surges, flow reversals or disruptions at one plant can affect the whole system.

“You might think of their working sound as the music of our spheres, for if even one were to fall out of phase and begin spinning at its own speed, if its steady precise humming became discordant — a wobbly song of its own, well, then...” Blackout. The breakdown occurs almost instantaneously. Repairing it, as anyone who’s been caught in one knows, can take days.

Alas, Ms. Brox seems to join a backlash against [compact fluorescents](#), those curly bulbs we’re encouraged and soon will be mandated to use (Beginning in January 2012, federal law will require that light bulbs will need to be 30 percent more efficient than current incandescent bulbs). They are far more energy efficient than incandescent light bulbs, but she, like others, is nostalgic for old-fashioned bulbs. They “still shed a more satisfactory light than anything yet developed to replace them.”

I disagree. Sure, they come on slowly, but the gradual brightening is nuanced, soft, and the light they cast is a gentler glow than the incandescent bulb. They have their problems (cleaning up a broken compact fluorescent can be hazardous, because of the mercury) but to me they hark back to the days of gaslight, the soft glow a reprieve from the brilliance that surrounds most of our days and much of our nights.

Though she balks at compact fluorescents, she is passionate about the need to control the ever increasing brightness of the developed world.

“It’s not too much to imagine a night with room for more than mere brilliance will allow:

It's michelada time!

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the flowering of cockleburs and the warmth of cafes in evening; the safe passage of loggerhead turtles and skyscrapers figured anew; the stars above more brilliant ... and our own long-storied selves intimately at home in immensity.”

We need to bring our need for light into harmony with the needs of those who share the earth with us.

A version of this article appeared in print on July 27, 2010, on page D4 of the New York edition.

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