Heather

Heather Hoffman
213 Hurley Street

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Opinion

JENNIFER GRAHAM

Let there be night

Has unnecessary lighting become a new form of home invasion?

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GARY HOVLAND FOR THE BOSTON GLOBE

WHEN THOMAS Edison coaxed a carbonized cotton thread to burn for 14 hours in October of 1879, he lit the world — and murdered sleep.

One hundred and thirty-four years later, nearly 9 million Americans have to take pills to fall asleep, according to the Centers for Disease Control and Prevention, and a quarter of us sleep poorly even after we do. For this, we can blame stress and Starbucks,

yes. But we must also blame artificial light, which disrupts ancient and essential rhythms. Artificial light also kills birds and bats, wastes tax dollars, obscures the stars, and, as the enabler of third-shift work, is a "probable carcinogen." Our electrifying hero is morphing into a villain.

In his new book, "The End of Night," Paul Bogard assesses the ills of a society in which everything is illuminated. "Already, some two-thirds of Americans and Europeans no longer experience real night — that is, real darkness — and nearly all of us live in areas considered polluted by light," he writes.

In New England, we are particularly afflicted. Look at the World Atlas of Night Sky Brightness, a catalog of satellite images taken at night. The region is ablaze with orange and green, indicative of a wealth of urban centers, but a poverty of dark skies.

This is not a new development. In the classic "The Outermost House," which describes a sojourn on Cape Cod in the 1920s, Henry Beston decried a civilization "full of people who have not the slightest notion of the character or the poetry of night, who have never seen night."

This was eight years before the Rural Electrification Act was signed.

The problem is not that we have artificial light, but too much light that is unnecessary or poorly designed, Bogard says. In researching the book, he visited Concord and learned about the public outcry that occurred when the town turned off more than a third of its streetlights. The author was mystified. "In Concord I found a friendly New England town," he wrote, "and not any place where you would expect to be attacked by a violent predator. And yet, here were glaring streetlights that did as much to impair my vision as they did to brighten my way."

An irony: The lights that are supposed to keep us safe — the incessant halo of streetlights, the high-powered spotlights affixed to our neighbors' roofs — have become a new form of home invasion.

As darkness becomes more elusive and therefore more precious, savvy communities are taking advantage, and dark-sky tourism is taking off. In Quebec, the Mont-Mégantic Observatory was the first site to be recognized as an International Dark-Sky Reserve by the International Dark-Sky Association. Places as diverse as Tanzania and the Isle of Man in the Irish Sea are luring tourists with promises of black skies streaked with thousands of stars that many urban Americans don't even know exist.

Closer to home, Bogard spent some time sky-gazing at Cadillac Mountain in Acadia National Park in Maine. "This place gives me hope," he writes. "Here in the East, not six hours from Boston, a place where for millions of people each year, the beauty and mystery of night can be brought within reach."

A visit might not help us sleep at night, once we return to the green-and-orange hues of the light-polluted realm in which we Bostonians live. But it will at least remind us of the time, a couple of million years ago, when our circadian rhythms worked just fine, and we got all the melatonin we needed from our bodies — not the CVS that's open 24/7.

Jennifer Graham writes regularly for the Globe.

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The End of Night: Searching for Natural Darkness in an Age of Artificial Light, by Paul Bogard

(Little, Brown and Company, 271 pages)

By Jennifer Graham

8/15/2013 - The rude rays of the sun blemish the author's picture in The End of Night, but it's the perfect illustration for Paul Bogard's book, a sobering yet buoyant examination of how light has driven darkness out of modern life at significant cost.

As a topic, this is not new. In 1928, decades before rural America was widely electrified, Henry Beston wrote in The Outermost House, "To-day's civilization is full of people who have not the slightest notion of the character or the poetry of night, who have never even seen night." Bogard himself has published an anthology on the subject, Let There Be Night: Testimony on Behalf of the Dark.

But there's always room for more musing on a compelling subject, particularly when one is as eloquent and educated as Bogard. Part memoir, part journalism, part poetry, The End of Night is a pilgrimage of man who sets out to discover what incessant illumination is doing to the planet and its inhabitants.

The upshot: nothing good.

In 2001, Bogard writes, an amateur astronomer named John Bortle created a now-widely-used scale to classify the darkness of skies. On the Bortle scale, Class 9 is what you see in a city; Class 5, the suburbs; Class 2, "truly dark." Class 1 — forget it; the typical American will never see it. Increasingly bright satellite images over the past few decades show how darkness is disappearing in the U.S.; how, even at 2 or 3 a.m., our skies are tarnished by the light of parking lots, shopping centers, sports facilities and street lamps. (In the U.S., "some 60 million streetlights blaze all night," he writes.)

Three thousand stars should be accessible to the human eye, yet most people can only see a fraction of them. In Bogard's travels, he meets someone whose mother, visiting from the city, asked, quite sincerely, "What are all the white dots in the sky?" They were stars. Says one astronomer Bogard interviews, "Everyone's grown up in cities. We have no idea that it can be any other way. People no longer realize that you should be seeing thousands of stars."

But while Bogard, fascinated by the night sky since his childhood in Minnesota, mourns our collective inability to see the Milky Way, he's equally troubled by the other ills that plague a society that is perpetually and artificially lit. Among them: the physical maladies that affect third-shift workers whose schedules interrupt circadian rhythms (the World Health Organization considers the night shift a carcinogen); the disruption of migratory patterns, and the deaths of tens of thousands of birds as artificial light and structures disrupt ancient patterns; the inability of humans to distinguish rational from irrational fears.

Bogard confesses to an innate fear of the dark, even as he argues and acts against it, plunging into dark places around the world, sometimes alone, sometimes in the company of astronomers and witches, sometimes in the presence of mountain lions. "Safety and security" is the reason given for most light pollution, but The End of Night convincingly argues that darkness need not be synonymous with fear; that in fact, if we learn to embrace the darkness, to adopt its rhythms and learn its lessons, our lives will be pleasantly full and less fearful.

The topic of darkness in an over-lit world is so compelling, and Bogard's research so solid, that it seems almost unnecessary for the writing to be so good. The End of Night is the rare book that's even better than it needed to be. We learn something on every page, meet fascinating people through Bogard's travels, and emerge with ideas on how to not only improve the planet, but enhance our own journeys on it. Nothing against libraries, but this is a book that's worth buying. Save the money for it by turning off some lights. A+ —Jennifer Graham