

# ***TechnOzarks:***

*Essays in Technology, Regional Economy, and Culture*

**Edited**

by

**Thomas A. Peters**

**Paul L. Durham**

**Foreword**

by

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**The Ozarks Studies Institute of  
Missouri State University**

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Cover photo: The Chadwick Flyer stopping in Ozark, Missouri (*ca.* 1909).

*Courtesy of the Richard Crabtree Collection.*

Half-title page photo: Neosho-built engines in a Saturn V rocket (*ca.* 1967).

*Courtesy of Larry James.*

Interchapter I image (p.ii): Streetcar in the Town Square (1919).

*Courtesy of the History Museum on the Square, Springfield, Missouri.*

Interchapter II image (p.92): Lily Tulip Cup Corporation (1951).

*Courtesy of the History Museum on the Square, Springfield, Missouri.*

Interchapter III image (p.184): X-ray photoelectron spectrometer, JVIC (2016).

*Starboard & Port Photography, courtesy of Allen D. Kunkel.*

Image facing Notes on Contributors (p. 282): Panorama at West Shops in Springfield, Missouri (1927). *Thomas Railroad Collection, MSU Special Collections and Archives.*

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### Introducing The OSI Publications Series in Ozarks History and Culture

The Ozarks Studies Institute (OSI) of Missouri State University seeks to preserve the heritage of the Ozarks, its culture, environment, and history by fostering a comprehensive knowledge of Ozarks’ peoples, places, characteristics, and dynamics. The Institute promotes a sense of place for residents and visitors alike and serves as an educational resource by collecting existing—and discovering new—knowledge about the Ozarks and by providing access to that knowledge.

Following *Living Ozarks: The Ecology and Culture of a Natural Place* (2018),

*TechnOzarks* is the second volume in the OSI series. Along with its companion

journal, *OzarksWatch*, the series aims “to introduce the Ozarks to the world,” and vice versa.

What readers have said of the first volume, *Living Ozarks*:

Authors in this anthology are aware of tourism’s fantasies that overlay geology’s reality and that the Ozarks’ fragile natural landscape requires stewardship. We know that the environment shapes all creatures that live within it, including us. We must be prepared to address our presence as part of the natural—what is the cost to absorb our footprint?

—Lynn Morrow, editor, *Ozarks in Missouri History: Discoveries in an American Region*

Any discussion of sustainability in the Ozarks must involve not only the natural environment, but also elements not commonly thought of as natural resources: the history, the heritage, and the people. These are key elements that make this region unique and attractive to outsiders and tourists and give the Ozarks its unique identity. *Living Ozarks: The Ecology and Culture of a Natural Place* brings this point home in a decisive and definitive work.

—Paul W. Johns, author, *Unto These Hills: True Tales of the Ozarks*



**Ends of Antecedents:**  
Some Views of Natural Color and Form  
*Photography by Chris Barnhart*



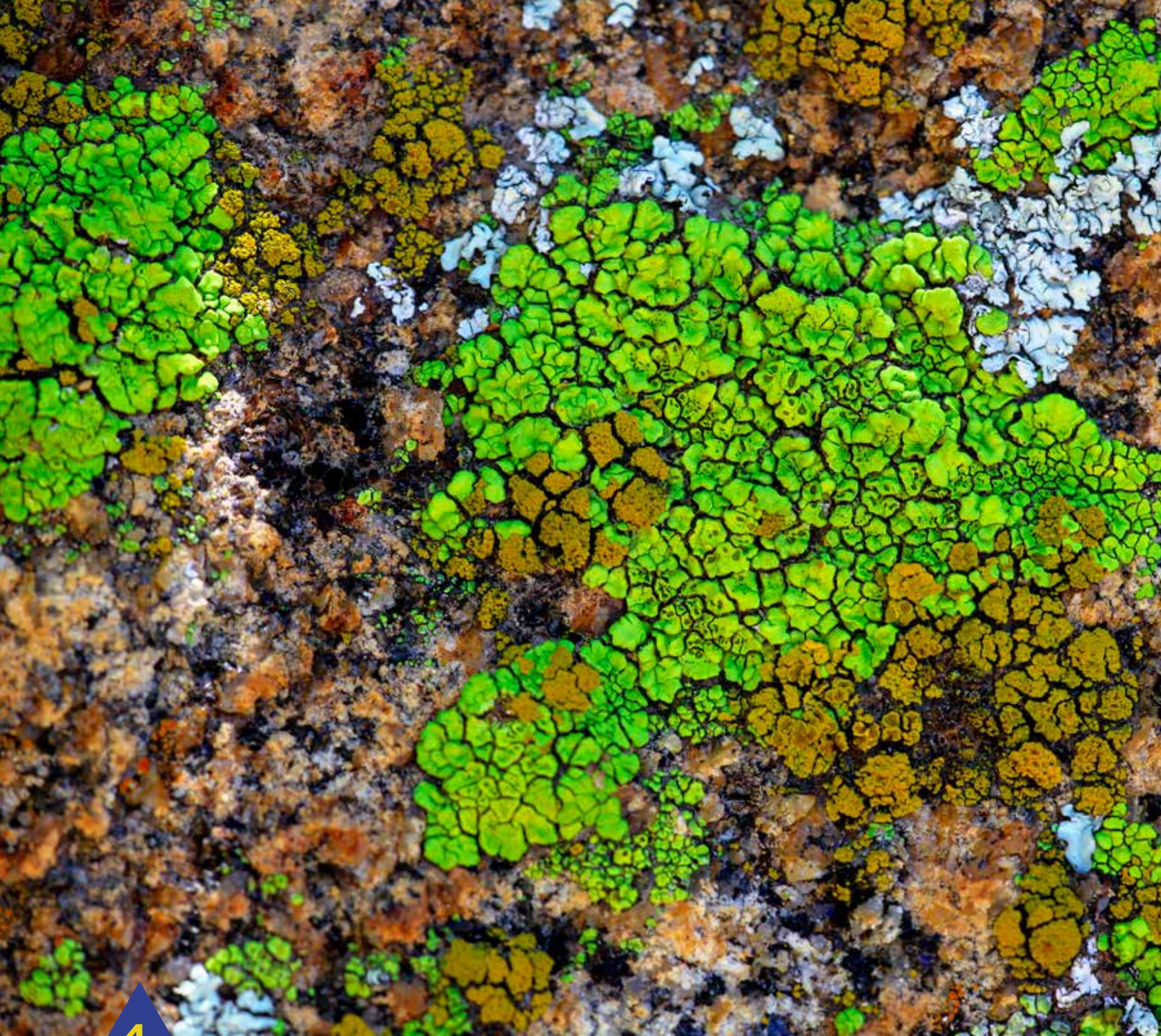


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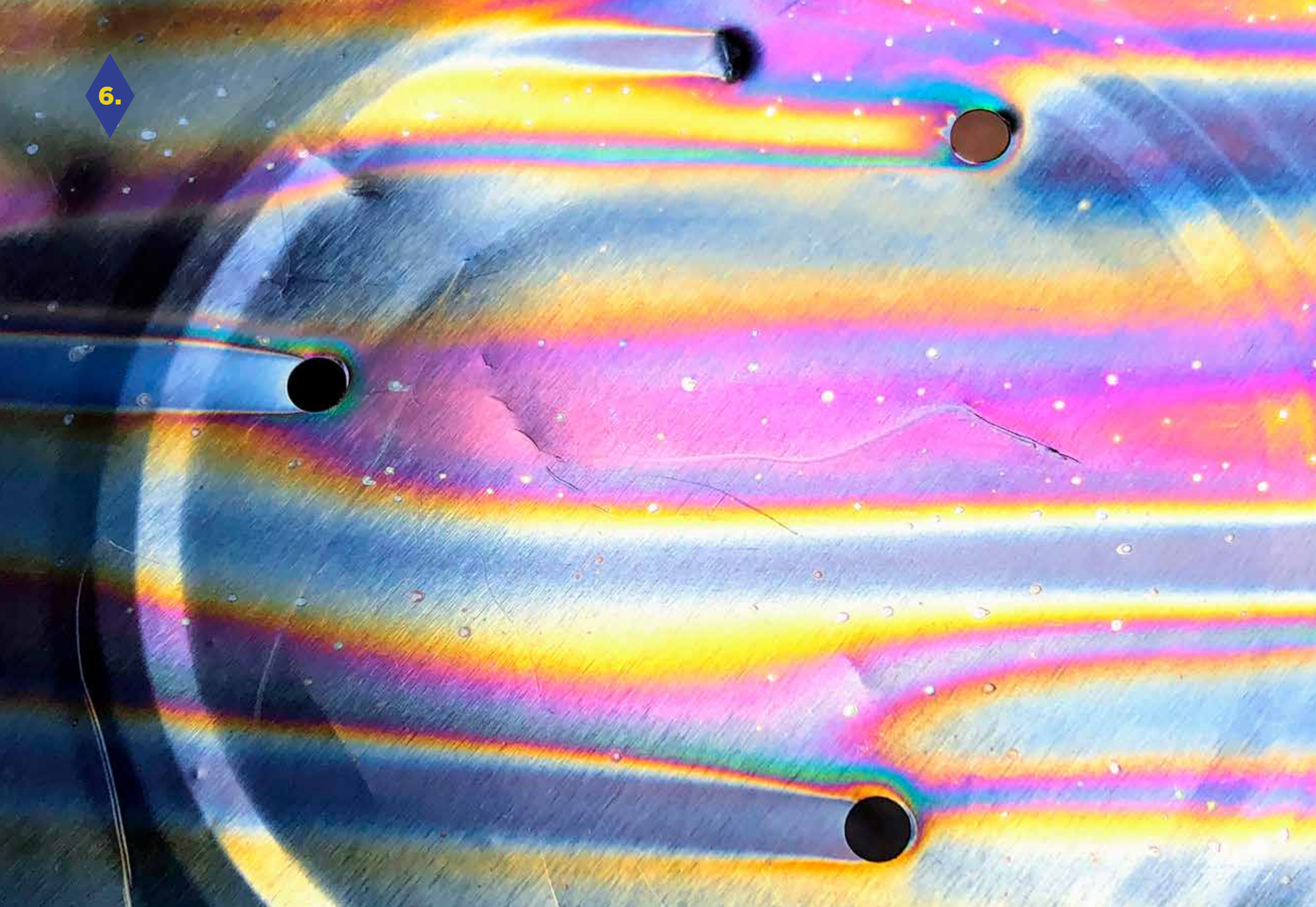
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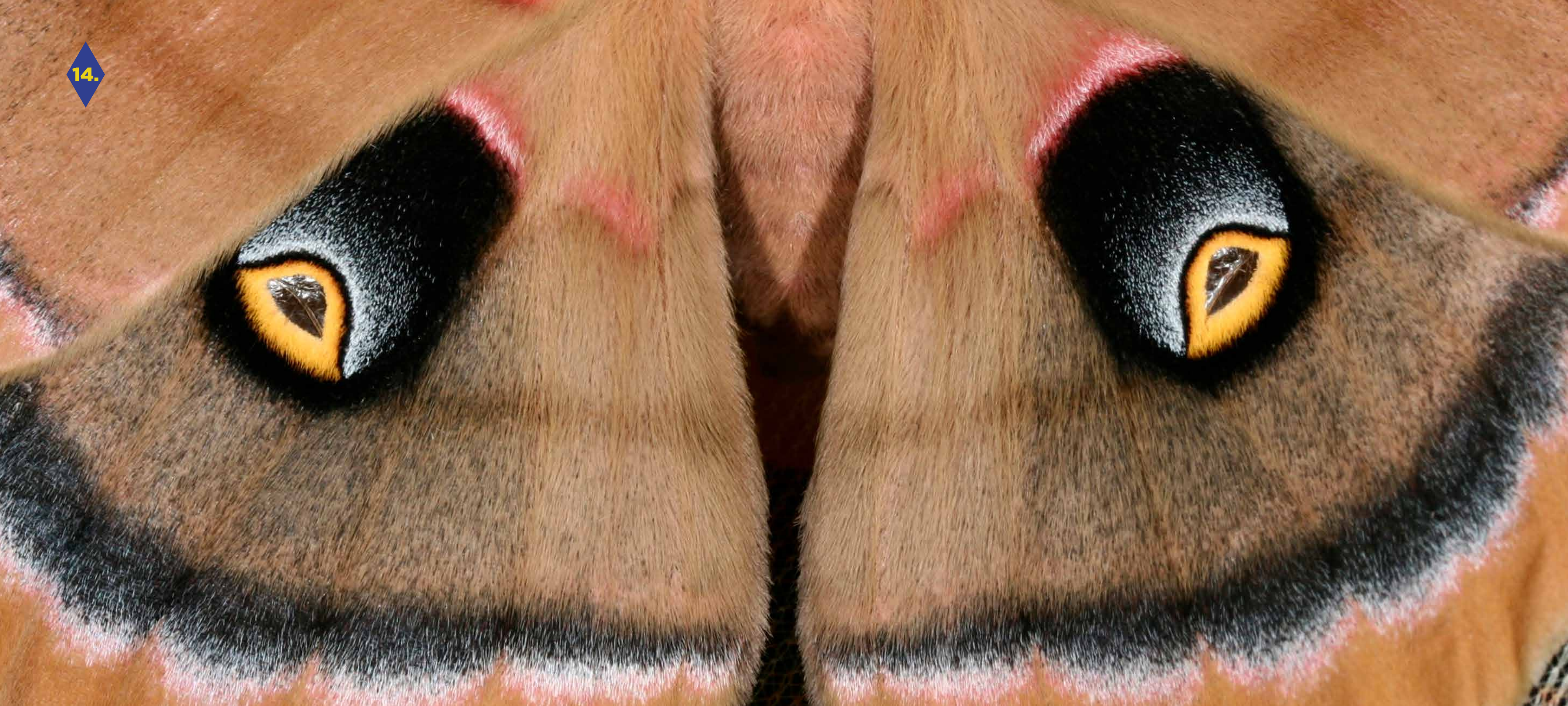
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Images

- 1.** Cherry gum (2017).  
The resin exuded by cherry trees for defense anticipated chewing gum and gummy bears.
- 2.** The logarithmic shell-spiral of a moon snail (2004).  
“Seek not for ends, but for antecedents.” —D’Arcy Thompson
- 3.** Lichen on stone in the Boston Mountains (2009).  
Lichens are teams of algae and fungus, combining their talents to colonize bare rock.
- 4.** Colonies of crustose lichens (2009).  
In a two-dimensional surface world, competition creates sharp boundaries between species.
- 5.** Decomposers hard at work on an Ozark forest floor (2009).  
“Into every empty corner, into all forgotten things and nooks, Nature struggles to pour life, pouring life into the dead, life into life itself.” —Henry Beston
- 6.** Pie pan after the dishwasher (2018).  
Oxide layers create the prismatic effects, and the streaks result from patterned flow around holes and dents.
- 7.** Frost framing a window in January (2014).  
The crystalline forms of frozen water result from cohesion of the tetrahedral molecules—a wonderful balance of rule and randomness.

- 8.** Water grass and reflected sky (2017).  
One of the photographer’s favorites, promising worlds above and below.
- 9.** Carp at Fellows Lake (2009).  
An iconic and voracious invasive species, though introduced intentionally from Asia as sport fish.
- 10.** Caterpillar of small-eyed sphinx moth, on wild cherry stained by leaf-spot fungus (2013).  
The unseen artists in this composition are the birds that overlook well-camouflaged meals, generation after generation.
- 11.** Water striders skating on the surface of a pond (2012).  
“If there is magic on this planet, it is contained in water.” —Loren Eisley
- 12.** Eggs of pipevine swallowtail butterfly (2013).  
All of its life stages contain toxins from its host plant, and the adult swallowtail is mimicked by other species for protection from predators.
- 13.** Pumpkin spider (2017).  
This colorful form of the marbled orb-weaver is inconspicuous among fall foliage and berries.
- 14.** Polyphemus moth (2006).  
A native Missourian, its dramatic “eyes” may startle potential predators when the moth raises its wings.