

FOR YOUNGER READERS

Enticing Tales of Science—Some Suggestions from 2009

Engaging books are one way to encourage an interest in science in children and young adults. For some ideas for your holiday gift list, consider the finalists for the 2010 *Science Books and Films* Prizes for Excellence in Science Books. The prizes honor titles that promote an understanding and appreciation of science in younger readers.

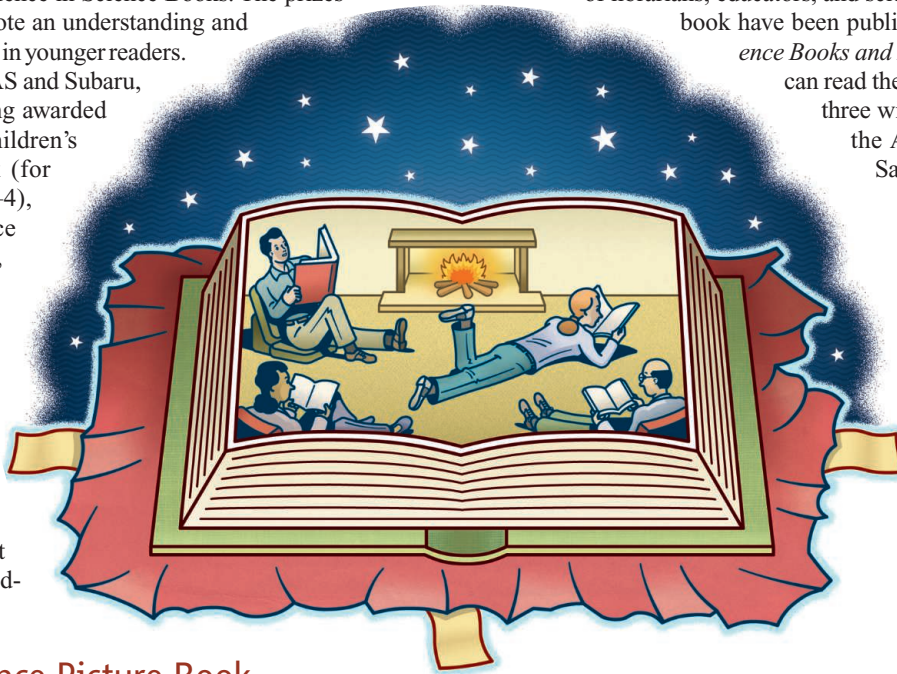
Sponsored by the AAAS and Subaru, this year they are being awarded in three categories: children's science picture book (for readers in grades K–4), middle grades science book (grades 5–8), young adult science book (high school). As is usually the case, the finalists for the young adult award are not books specifically intended for that age group—instead, they were written for the public at large. The titles consid-

ered for the 2010 prizes were published between September 2008 and August 2009.

Here, we offer short descriptions of the 13 finalists chosen by panels of librarians, educators, and scientists. Full reviews of each book have been published or will appear in *Science Books and Films*, and AAAS members can read these reviews on the Web. The three winners will be announced at the AAAS Annual Meeting in San Diego in February.

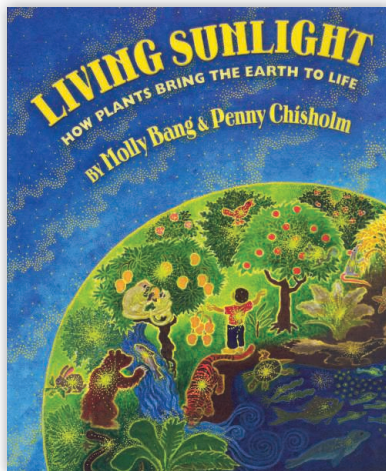
Among the grounds for selecting the prize winners are a clear and accurate presentation of scientific concepts. But we and the judges hope that the books will appeal to young readers so that they turn the pages for enjoyment as well as for what they may learn.

—Heather Malcomson,¹
Barbara Jasny, Sherman Suter



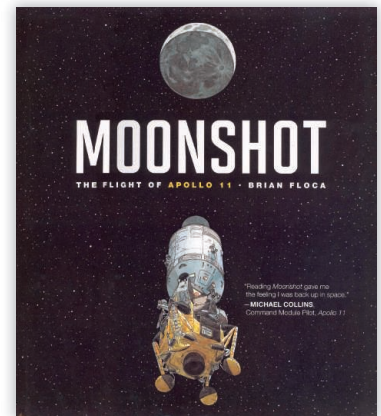
Children's Science Picture Book

Living Sunlight: How Plants Bring the Earth to Life. Molly Bang and Penny Chisholm. Blue Sky (Scholastic), New York, 2009. 36 pp. \$16.99, C\$18.99, £10.31. ISBN 9780545044226. The Sun narrates a clear, lyrical account of photosynthesis and its fundamental roles in life on Earth. It sketches what happens at the molecular level as green plants capture solar energy in their chlorophyll, use it to break apart water, and build sugar from carbon dioxide. It explains that animals (people included) require the sugar and oxygen produced by plants, and that the carbon dioxide exhaled by animals when they combine these cycles back to the plants. Bang's vibrant illustrations—with leaves, animals, and landscapes outlined in bright yellow—light up the pages. Four pages of notes provide explanatory details (including the role of rubisco and chemical reactions for photosynthesis and respiration) and acknowledge some simplifications (such as leaving out phytoplankton, the focus of MIT ecologist Chisholm's own research). Effectively combining text and artwork, the authors offer a very enjoyable science lesson.



Moonshot: The Flight of Apollo 11. Brian Floca. Atheneum (Simon and Schuster), New York, 2009. 44 pp. \$17.99, C\$19.99, £10.92. ISBN 9781416950462.

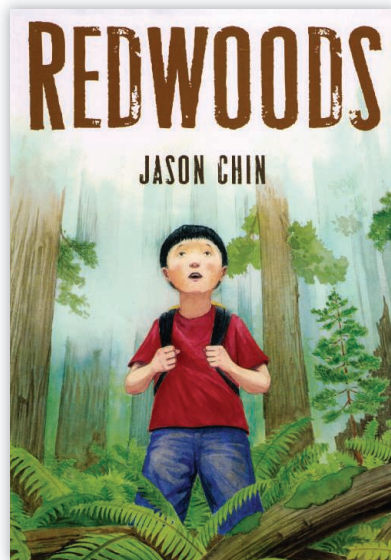
NASA's Apollo missions to the Moon captured the imagination of Americans and the entire world. Between 21 July 1969 and 14 December 1972, 12 astronauts set foot on the lunar surface. This book focuses on *Apollo 11*, the first mission to attempt to (and to) place humans on the surface. It is beautifully illustrated with large-size, full-color renderings of the participants, technologies, and wider physical and social environments within which the first Moon walk occurred.



Redwoods. Jason Chin. Roaring Brook, New York, 2009. 36 pp. \$16.95, C\$18.95, £10.21. ISBN 9781596434301.

While waiting for a subway train, a boy picks up an abandoned book and is drawn into a story about coastal redwoods. On the train, he reads that some redwoods now alive sprouted during the Roman Empire, and we see him sitting between a legionnaire and a citizen in a toga. He emerges from the subway to find himself in a redwood forest, where he learns about the growth of these tall trees, their resistance to fire, and their ability to make their own rain from the coastal fog. Pulling himself up a rope into the crown of a tree, he discovers the diverse fauna (birds, mammals, and amphibians) and flora (ferns, mosses, and

¹*Science Books and Films*, 1200 New York Avenue NW, Washington, DC 20005, USA. E-mail: hmalcoms@aaas.org

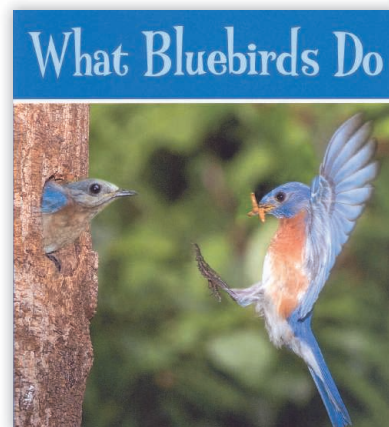


even other trees) that live in the forest canopy. From the height of skyscrapers, he rappels down into a city park. He notices the time and dashes off, leaving the book on a bench. A girl picks it up and starts off on her own adventure. Chin packs a great deal of information into his succinct text, and the blend of fantasy and realism in his watercolors will charm readers.

What Bluebirds Do. Pamela S. Kirby. Boyds Mills, Honesdale, PA, 2009. 48 pp. \$18.95, £11.50. ISBN 9781590786147.

North America is home to three species of bluebirds. Children who live near these beautiful birds are sure to enjoy the pages of Kirby's photo-

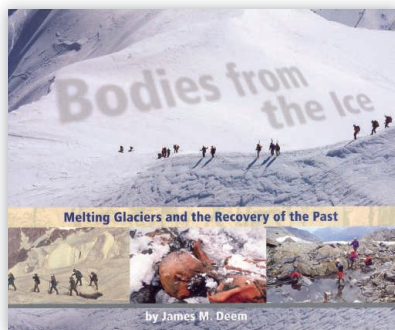
graphs showing the life of a family of eastern bluebirds that nested in her backyard. The author starts the story with the parents' courtship. They mate, build their nest in a tree, and hatch five eggs. The narrative is based on the author's actual observations, and in this case the female had to be taught by her partner how to care for the babies. The simple, appealing text presents many interesting facts—for example, as part of his efforts to find favor in the female's eyes, the male will hold a worm in its beak and sing at the same time. At the book's end, Kirby describes how bluebirds get through the fall and winter and lists other books and Web sites for additional information. Here, she stresses how providing nest boxes helps bluebird populations. I only wish she had included directions for making those birdhouses.



Middle Grades Science Book

Bodies from the Ice: Melting Glaciers and the Recovery of the Past.

James M. Deem. Houghton Mifflin, Boston, 2008. 64 pp. \$17. ISBN 9780618800452.



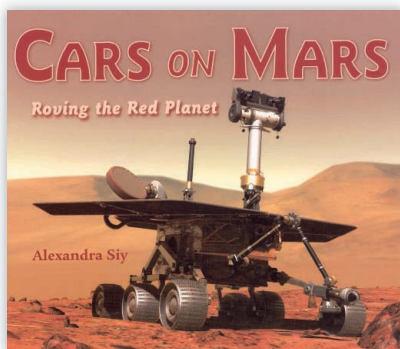
Preserved bodies frozen in ice present one aspect of human history that few people, other than a small number of specialists, ever glimpse. Deem has compiled a highly useful and readable book on that unusual aspect of prehistory. He pulls together detailed and well-illustrated accounts of the scientific investigation of such discoveries as the ice-man Ötzi, the remains of frozen children in the Peruvian Andes, and the body of George Mallory on

Mount Everest. In addition, he provides a clear discussion of glaciology and how prehistoric events can be preserved. The short book accurately portrays the process of science from discovery to investigation.

Cars on Mars: Roving the Red Planet.

Alexandra Siy. Charlesbridge, Watertown, MA, 2009. 64 pp. \$18.95, £12.99. ISBN 9781570914621. At the end of the book, Siy says that she fell in love with Mars in 2003, when she viewed the shimmering planet while on a camping trip. That love is apparent in her history of NASA's Mars Exploration Rovers. She starts with Cornell University astronomer Steve Squyres and his dream of exploring Mars to learn

about its past history and to look for signs that life may have existed there. The author describes the landing of the two golf-cart-sized rovers (Spirit and Opportunity) in January 2004 and the trials and triumphs of their subsequent travels across the planet's surface. Through the story, readers will learn



about the design of the rovers, the scientific questions that their missions have addressed, and the challenges Earth-bound researchers faced to keep them sending back information. The very readable text and excellent photographs (made available to the public by NASA, JPL-Caltech, Cornell, and the U.S. Geological Survey) depict a scientific and technical triumph.

The Frog Scientist.

Pamela S. Turner, photographs by Andy Comins. Houghton Mifflin, Boston, 2009. 64 pp. \$18, £10.92. ISBN 9780618717163. Scientists in the Field.

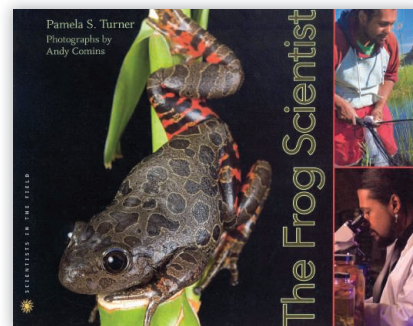
As a child in South Carolina, Tyrone Hayes liked to collect frogs, snakes, and turtles. As a professor at the University of California, Berkeley, his research focuses on the effects of steroid hormones on amphibian development. (These may contribute, along with factors such as habitat loss and a devastating fungal disease, to the drastic global decline in amphibians.) Turner joins Hayes and his students in the field (a Wyoming pond) and laboratory while they test the hypothesis that the

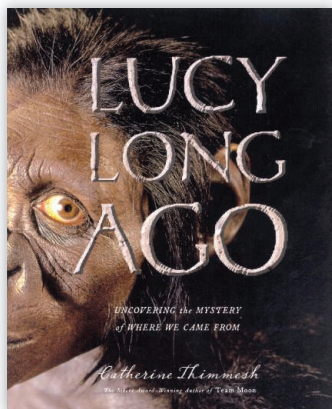
commonly used pesticide atrazine feminizes male leopard frogs. She describes how they design, carry out, analyze, and interpret their experiment. She also tells how Hayes struggled as an undergraduate at Harvard until he found his calling in a research lab. The book introduces colorful frogs and toads from around the world as well as some of the efforts to save them from extinction. The lucid text and numerous photos of Hayes, his young assistants, and amphibians combine to convey both the fun and importance of doing science.

Lucy Long Ago: Uncovering the Mystery of Where We Came From.

Catherine Thimmesh. Houghton Mifflin, Boston, 2009. 64 pp. \$18, £10.92. ISBN 9780547051994.

The award-winning author's latest engaging book tells the story of the discovery of a fossil hominid and what that finding can tell us about our ances-



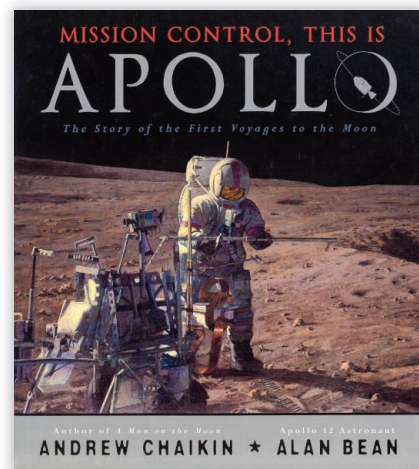


tors and ourselves. Each chapter poses a question—"Child or grownup?" "Boy or girl?" "Ancient or modern?" "Known species or new?"—and proceeds to describe how paleontologists answered these questions through their work. Through these, Thimmesh demonstrates perfectly how the scientific method can be used to answer such questions. Photographs from the field and laboratory, graphs, charts, and computer-generated pictures of Lucy in her ancient habitat add to the book's appeal.

Mission Control, This Is Apollo: The Story of the First Voyages to the Moon. Andrew Chaikin and Alan Bean. Viking, New York, 2009. 128 pp. Paper, \$23.99, C\$30, £14.56. ISBN 9780670011568.

Forty years after the first landing on the Moon, the authors trace the history of the 20th century's greatest adventure. Although intended for children

ages 8 to 12, their accurate account will delight and inform readers of all ages, from those who remember the excitement of Apollo to those who have only heard about it. The well-illustrated book includes many paintings by Bean, an Apollo 12 astronaut and now a professional painter. Chaikin, Kohl, and Bean describe the hazards, drama, danger, and rewards of exploration. Their discussion of the risks faced by the astronauts is particularly relevant as NASA prepares to return to the Moon in an era when the public seems much less willing to accept the loss of lives in space.



Young Adult Science Book

Confessions of an Alien Hunter: A Scientist's Search for Extraterrestrial Intelligence. Seth Shostak. National Geographic, Washington, DC, 2008. 319 pp. \$27, C\$32, £14.99. ISBN 9781426203923.

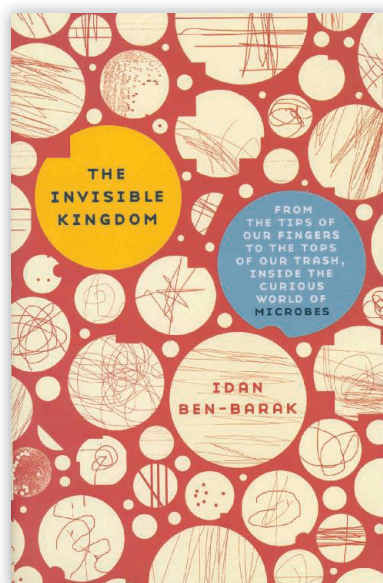
Shostak recounts the search for signs that intelligent life exists on a planet other than Earth—from the conceptions of the Greek philosophers to radio astronomers and the ongoing Search for Extraterrestrial Intelligence (SETI).

Researchers have been searching, for decades, for radio transmissions that would represent evidence of intelligent life on another planet. As a senior astronomer at the SETI Institute in California, the author is certainly an enthusiast. He is, however, careful to inject an appropriate amount of balance: He describes false leads that have set scientists' hearts pounding (no matter how briefly) and reasons why some scientists believe that intelligence anywhere else in the universe would be an extremely rare event. He debunks the idea that aliens have visited us already even while considering what our reaction will be when we find them. There are provocative discussions of the likelihood that we will first

make contact with alien machines rather than biological creatures. In addition to these enticing speculations, readers will also find informative coverage of the basics of astronomy and the components of ancient life on Earth. Shostak tells this fact- (and idea-)filled story with a wry sense of humor.

The Invisible Kingdom: From the Tips of Our Fingers to the Tops of Our Trash, Inside the Curious World of Microbes. Idan Ben-Barak, Basic, New York, 2009. 214 pp. \$24, C\$30.50. ISBN 9780465018871. **Small Wonders: How Microbes Rule Our World.** Scribe, Carlton North, Australia, 2008. Paper, 240 pp. \$A26.95. ISBN 9781921372179.

Biofilms, antibiotic resistance, horizontal gene transfer, and the value of hand washing are among the vast range of topics Ben-Barak discusses in this



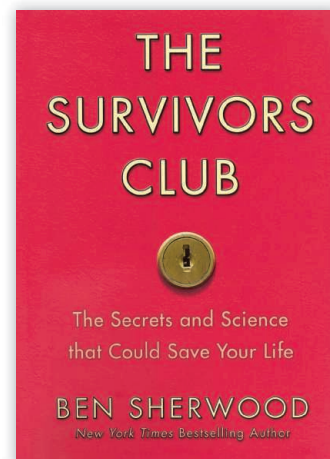
introduction to microbes. His old and loose definition of the term encompasses bacteria, archaea, fungi, and protists. He also considers forms from the untidy border of life itself: viruses, transposons, prions, and Tasmanian devil tumor cancer. The fact-packed chapters reveal how microbes develop, behave, and evolve and how life on Earth would cease without them. "Bonus tracks" offer additional fascinating stories, such as that of the "corrupted blood" epidemic in the virtual World of Warcraft. The author often mentions how scientists

have developed our understanding of microbes, and he frequently raises unanswered questions and conflicting interpretations. Readers will find his chatty and humorous text offers a fun way to acquire a vast store of intriguing details about the small wonders that inhabit our world and our bodies.

The Survivors Club: The Secrets and Science That Could Save Your Life.

Ben Sherwood. Grand Central, New York, 2009. 399 pp. \$25.95, C\$28.99. ISBN 9780446580243. Michael Joseph (Penguin), London. £15.99. ISBN 9780718153106.

Sherwood combines true stories and scientific research to explain why some people, but not others, survive disasters, diseases, and accidents. The story-driven narrative makes his book one that young adults will read cover to cover. The author interviews numerous people who have survived a variety of events (moun-

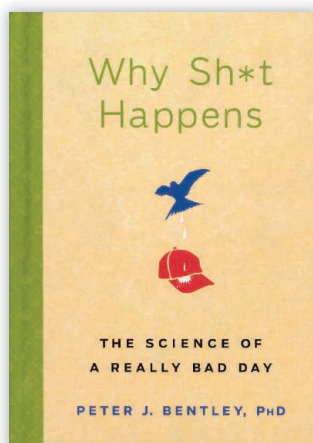


tain lion attack, car versus bike accident, cancer, prisoner of war, and holocaust) to determine why they did so. He alternates these accounts with scientific perspectives and interviews of researchers who have extensive experience in the field of survivor psychology. He leaves readers with some valuable techniques for improving their odds of making it through dangerous situations (anticipate, prepare, keep cool, be proactive).

Why Sh*t Happens: The Science of a Really Bad Day.

Peter J. Bentley. Rodale, New York, 2009. 320 pp. \$16.95. ISBN 9781594869563. **The Undercover Scientist: Investigating the Mishaps of Everyday Life.** Paper, Arrow (Random House), London, 2009. £8.99. ISBN 9780099522423.

Throughout this definitely quirky book, computer scientist Bentley is talking directly to you. And you are having a truly harrowing day: You get your finger stuck in a bottle, start a fire accidentally in your microwave, superglue



your thumb to your shoe, ruin your mp3 player by leaving it in a washing machine, forget where you've put your bag, and eat a slice of pizza with shards of glass in it—to name just a few of your misadventures. Each horrible happening serves as the jumping-off point for an explanation of the underlying science, whether it be of memory loss, the workings of the digestive system, or the origins of superglue. The discussion that follows after you accidentally open an infectious e-mail message and let it loose on your company's computer system includes a bit of history that many have forgotten—the basis of this use of the word "spam" was a famous Monty Python skit. Despite all of your mishaps, you do survive the day. You probably will get many chuckles (and some insight) from reading the book.

10.1126/science.1184317

For Younger Readers

Two from Japan

Carl Kay

To broaden the geographic scope of our coverage, we sought suggestions from Hiroe Masumoto, head of the Children's Science Books Committee of the Japan Association for the Study of Child Literature—a nonprofit group of librarians, teachers, authors, and others who study and review children's books (<http://homepage3.nifty.com/kodomonohonken>). The first of her two recommendations is a picture book; the second is appropriate for readers in the middle grades.

Hebi no Himitsu [Secrets of Snakes]. Ryu Uchiyama. Popular Publishing, Tokyo, 2008. 36 pp. ¥2310. ISBN 9784092131910. **Fushigi Ippai Shashin Ehon [Truly Amazing Photo Books for Kids], 14.**

Young readers will be enthralled by the author's stunning close-up photographs and simple text. These convey the beauty, power, and abilities of snakes as well as the "secrets" of their survival. For example, snakes smell and feel with their tongues, and they hear with ears hidden from our view. Many have flexible jaws that allow them to swallow volumes several times the size of their head. Some species even have a bone inside their body for breaking the eggs that they devour whole with these jaws. The more than 50 photographs show snakes shedding their skin, hatching, and capturing and swallowing prey. Some illustrate details of snake anatomy (such as where their bodies eliminate urine, which quickly turns to a white chalk). Lest children find these fascinating animals too attractive, Uchiyama includes a short warning on the danger of poisonous snakes.

Science's Japan office, Asca Corporation, Tomoko Furusawa, Rustic Building 7F, 77 Tenjin-cho, Shinjuku-ku, Tokyo 162-0808, Japan. E-mail: carlkay@mub.biglobe.ne.jp



Noasobi Wo Tanoshimu Satoyama Hyakunen Zukan [Enjoying Nature Close at Hand: An Illustrated Guide to Our Enduring Satoyama].

Tatsuhide Matsuoka. Shogakukan, Tokyo, 2009. 36 pp. ¥1200. ISBN 9784591107485.

The landscape system called satoyama, literally "village and mountains," mixes secondary woodlands, grasslands, wetlands, fields, orchards, rice paddies, farmsteads, and villages in a complex mosaic. Here, humans interact intimately with the nature around them without either destroying it or walling it off into untouchable preserves. (Through the Satoyama Initiative, the Japanese Ministry of the Environment is working to preserve such landscapes, because they offer a balance between conserving biodiversity and the sustainable use of resources.) The author's hundreds of beautiful drawings capture the feeling of today's elders in Japan who grew up gathering mushrooms and berries, fishing, drying flowers, and chasing fireflies even in areas not far from urban centers. The text describes the daily activities of birds, plants, insects, and humans in these settings. There's even a recipe for a mixture of banana, whiskey, and sugar to brush on a tree trunk to attract night-flying insects.

10.1126/science.1185062