

reading this book when it seemed that global warming was the most significant crisis of the day requiring scientific thinking skills. The COVID-19 global pandemic quickly leapt onto the stage as a critical concern before I could finish. “With almost seven and a half billion people in the world, there is no room for delusion anymore. Having an ape brain couldn’t happen at a worse time.” How prophetic.

Stanley A. Rice has identified several ways our brains deceive us into seeing what we want to see and thinking what we want to think. The information that stays with us is the information that confirms what we already believe. These inherent biases and simplified methods of interpreting information leave us ill-equipped to respond to problems big and small. We leave ourselves vulnerable to being manipulated by faulty interpretations presented to us by leaders and other sources of information. There is no shortage of evidence for this to be true, but how do we recognize it in ourselves?

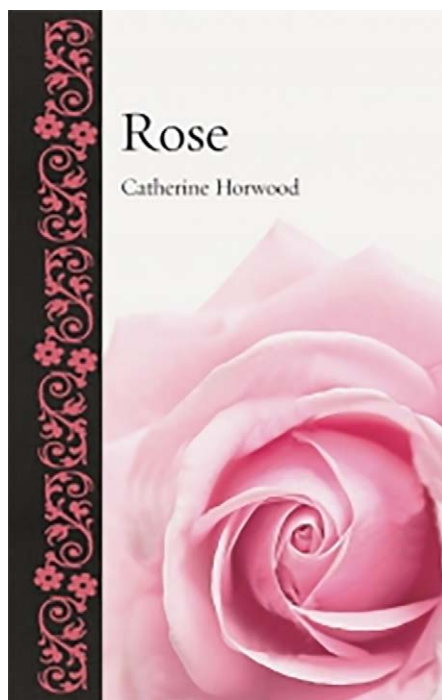
The book is arranged in several short chapters each identifying a particular skill or challenge to our scientific thinking. Real-world examples are often presented in a humorous way, such as the description of the author’s tobacco hornworm experiments determining effects of leaf toxicity to demonstrate construct validity (how do you know you are really testing for what you think you are testing for?). There are many chapters that are so relevant to current events, such as “Trust Us, We’re Scientists,” “Natural Selection,” and “The Rediscovery of Human Nature.” That last chapter explores the evolution of altruism, which has been highlighted by stories about health care providers, essential workers, and neighbors helping neighbors around the world. His explanations and exercises help understand motivations and behaviors of people that may seem hard to understand.

An opportunity for personal growth is presented in small chunks that are easily incorporated into the classroom to help students look at things differently and question their beliefs and understandings, not just to change but also verify their accuracy. This is exactly what people need to do to address problems of today and tomorrow. Darwin is quoted from the *Descent of Man*: “Ignorance more frequently begets confidence than does knowledge: it is those who know little, and not those who know much, who so positively assert that this or that problem will never be solved by science.” You may question your confidence as you read through this book, but it is a small price to pay to address ignorance.

Plus it is fun. As Rice concludes “Science is an adventure.”



Debbie Meinholdt  
Biology Teacher  
Fairfax County Adult High School  
Fairfax County, VA  
djmeinholdt@gmail.com



#### TARGETED TRADE BOOKS: BOTANY

**Rose.** By Catherine Horwood. 2018. Reaktion Books. (ISBN: 9781780230132). 240 pp. Hardcover, \$19.61.

We are all familiar with Gertrude Stein’s “a rose is a rose is a rose.” One of the most popular flowers, roses appear in a rainbow of colors, although there has never been a true blue rose. Roses have been described as “an index of civilization.” Author Catherine Horwood follows the history of roses over many centuries in multiple areas of the world, using interesting stories not usually found in other books. It is not known how long roses have been sharing their beauty and scents around the world, but fossils of primitive roses dating back 25–30 million years support the conclusion that they have been longtime inhabitants. In the early years of the first millennium, Arabs grew roses to produce rose water that was used for cooking, ritual cleansing before prayer, and building purification. In those times, the rose was important in Islam, but condemned or rejected in Judaism and Christianity. By the eighteenth century, roses were being cultivated.

A sampling of items the reader will find in this book includes the following:

- the discovery of remnants of a rose wreath in a 1700-year-old Egyptian coffin
- how Napoleon blocked the plan of Empress Josephine (known as Rose by her family) to collect every rose variety
- the meanings attributed to roses of specific colors
- the in-depth story of rose water, oils, and perfumes
- the many stories of the connections between roses and royalty
- the meanings and uses of “rose rents”
- why all the members of Germany’s “White Rose” movement were executed
- the contributions of the Wiltshire “wizard” to the hybridization of tea roses
- the chemicals that contribute to the fragrance of roses
- how national hostilities affected the journeys of roses as they moved from one country to another
- a description of ballet dancer Vaslav Nijinsky’s custom costume of rose petals
- the U.S. presidents who grew roses
- the health benefits of the rose

The rose is symbolic of many things, including its popular use as a symbol of love and romance. *Rose* is even an anagram of Eros, the Greek god of love. It is also the symbol of the Rosicrucian Order, a symbol of prayer in the Catholic rosary, and a symbol of power in the Wars of the Roses. The red and white Tudor Rose is the national flower of England and its image was embroidered on the coronation gown of Queen Elizabeth II. The rose is also honored by the Rose Bowl Stadium and the Tournament of Roses in Pasadena, California, as well as the White House Rose Garden in Washington, D.C.

A flower as beautiful as the rose is a natural subject and symbol in the arts. Roses are mentioned in many literary works, from those of Persia’s Omar Khayyām to England’s William Shakespeare, who informed us that a rose “by any other name would smell as sweet.” Ancient Greek poet Anacreon described the rose as “the most beautiful of flowers, the joy of gods, the pillow of Cupid, the garment of Aphrodite.” Dante Alighieri’s “mystic rose” is part of his *Divine Comedy*. *Moonlight and Roses* and *Ramblin’ Rose* are two of the more than 4000 love songs

whose titles contain the word “rose.” Despite the song, *The Yellow Rose of Texas* is not the state’s official flower. A silver rose is featured in Richard Strauss’s opera *Die Rosenkavalier*. The ballet *Le Spectre de la rose* is about a young girl whose dreams were brought to life by the spirit of the rose. Roses are found in numerous paintings, such as Botticelli’s elegant *The Birth of Venus*, in which Venus is shown rising through a cloud of roses. Georgia O’Keefe’s technique of painting close-up views of rose blossoms was mirrored by photographer Robert Mapplethorpe’s black-and-white close-ups of rose blooms. Besides countless works of art, roses also appear in family coats of arms, coins, stained glass windows, ship names, clothing embroidery, army berets, vases, jewelry, mosaics, and book covers, including this one.

*Rose*, packed with fascinating information, is a deeply researched, attractively written, and lavishly illustrated book that should appeal to booklovers interested in flowers, horticulture, and science history. It is appropriate for high school, college, and adult readers. In addition to an index, *Rose* includes two appendices (“The Rose Family” and “Recipes”), a timeline, a detailed list of references, a bibliography, and a list of associations and websites. When you read this book, don’t forget to “stop and smell the roses.”



Richard Lord  
Retired Biology Teacher  
Presque Isle High School  
Presque Isle, ME 04769  
rmlord@aol.com

AMANDA L. GLAZE-CRAMPES is an Assistant Professor of Middle Grades & Secondary Science Education at Georgia Southern University in Statesboro, Georgia. In addition to science teacher education, she has taught courses in biological sciences for grades 7–12 and undergraduate students over the last 14 years. Her interests include evolutionary biology, science and religion, and the intersections of science and society – specifically where scientific understandings are deemed controversial by the public. She holds degrees in science education from the University of Alabama and Jacksonville State University. Her address is Middle Grades & Secondary Education, Georgia Southern University, P.O. Box 8134, Statesboro, GA 30458; e-mail: aglaze@georgiasouthern.edu.

**THE EVOLUTION OF QUALITY**

**Bone Clones®**  
OSTEOLOGICAL REPRODUCTIONS

The finest detailed, most accurate and affordable reproductions of human and animal skeletal anatomy available today. Visit our website to see our complete line of skulls, skeletons and over 1500 other fine products.

**www.boneclones.com 800-914-0091**