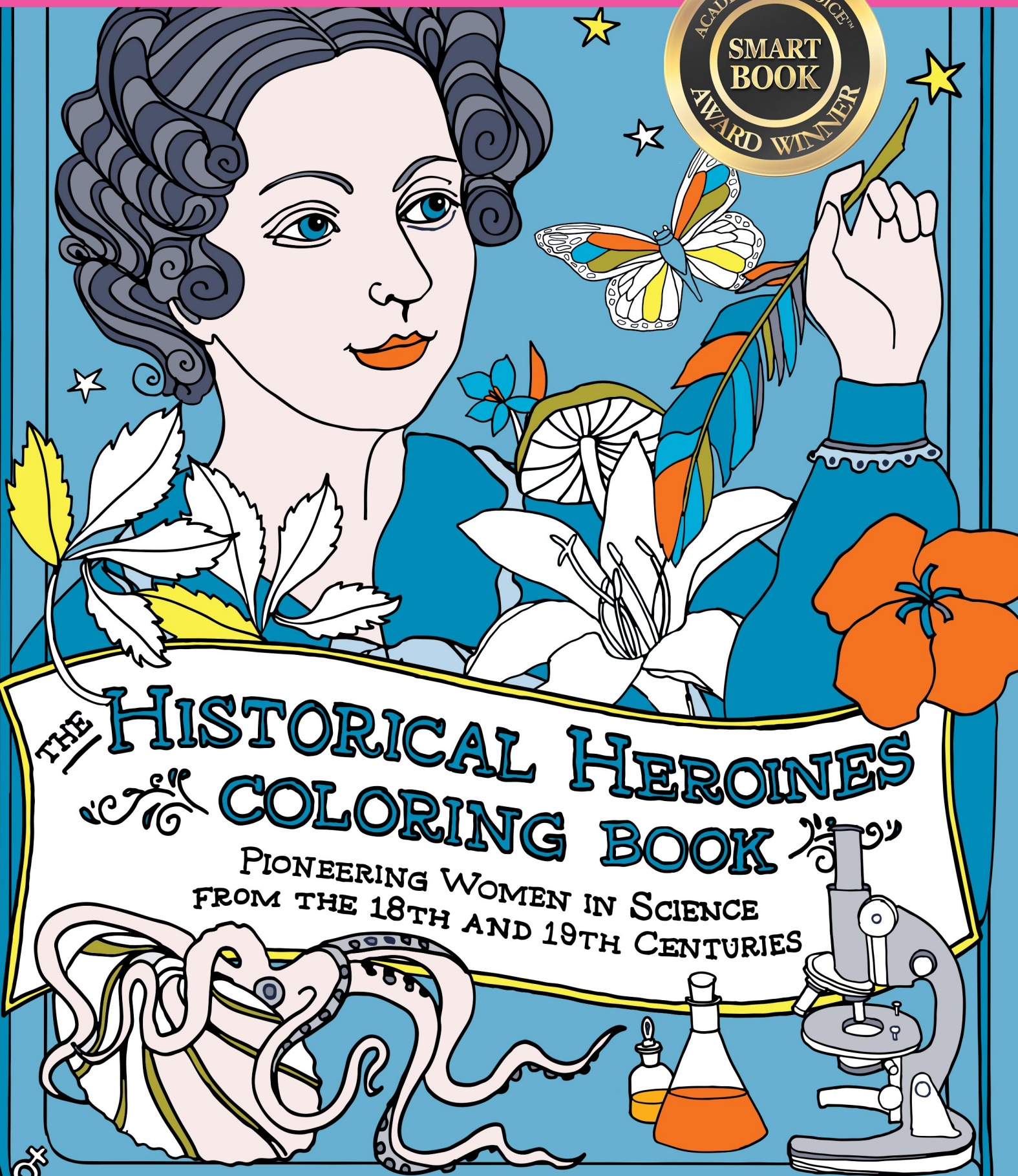


# Free Mini Printable Coloring Book!

Featuring Alice Ball (1892-1916), Jeanne Villepreux-Power (1794-1871), and Mary Anning (1799-1847).



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The Historical Heroines Coloring Book  
Pioneering Women in Science

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# THE HISTORICAL HEROINES COLORING BOOK

Pioneering Women in Science  
from the 18th and 19th Centuries



Written by Elizabeth Lorayne  
Illustrated by Kendra Shedenhelm  
Edited by Michael D. Barton

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# Alice Ball

1892–1916

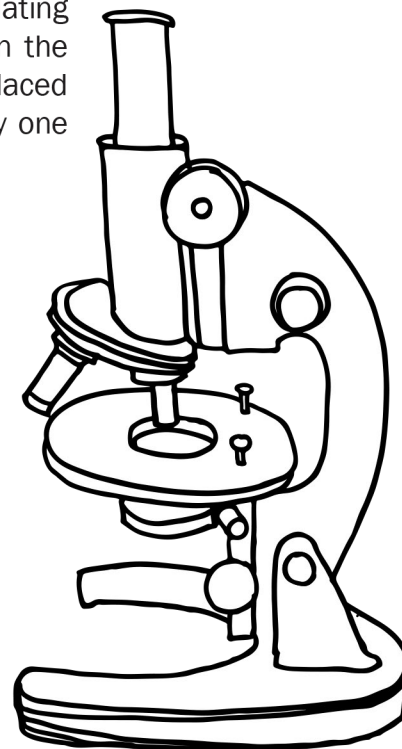
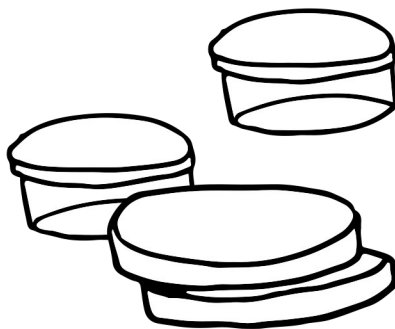
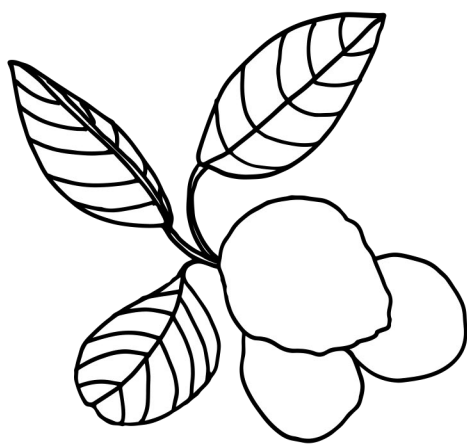
## Chemist tip!

To create a solution, you will need more solvent (such as water) to dissolve the solute (a substance, such as sugar)

Alice Ball was born in 1892 in Seattle, Washington. She had a keen interest in science starting as early as high school. Alice co-published an article in the *Journal of the American Chemical Society* while working on her undergraduate degree in chemistry. She went on to receive a master's degree in chemistry from the University of Hawai'i — becoming the first African American woman and also the first woman at all to accomplish this.

Upon graduation Alice did both postgraduate research and teaching at the University of Hawai'i. She was then asked to assist Dr. Harry T. Hollmann of Kalihi Hospital in figuring out how to isolate the active chemical compounds in chaulmoogra oil. The oil, found in a tropical tree that comes from India, had been used to treat leprosy, taken by the mouth. Alice figured out how to isolate the compound so that it could be given to leprosy patients through injection.

Unfortunately, she died before she could publish her research. Another chemist, Arthur Dean, not only continued her research and published it, but he did not give Alice any credit. In 1922 her former colleague Dr. Hollmann brought attention to this great disservice. Her method for isolating the active chemical compound was used until the 1940s. In the year 2000, a bronze plaque commemorating her work was placed at the University of Hawai'i's only chaulmoogra tree, the very one Alice had used to extract the oil.



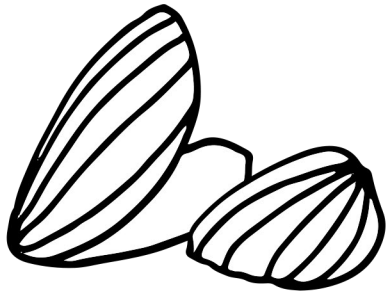


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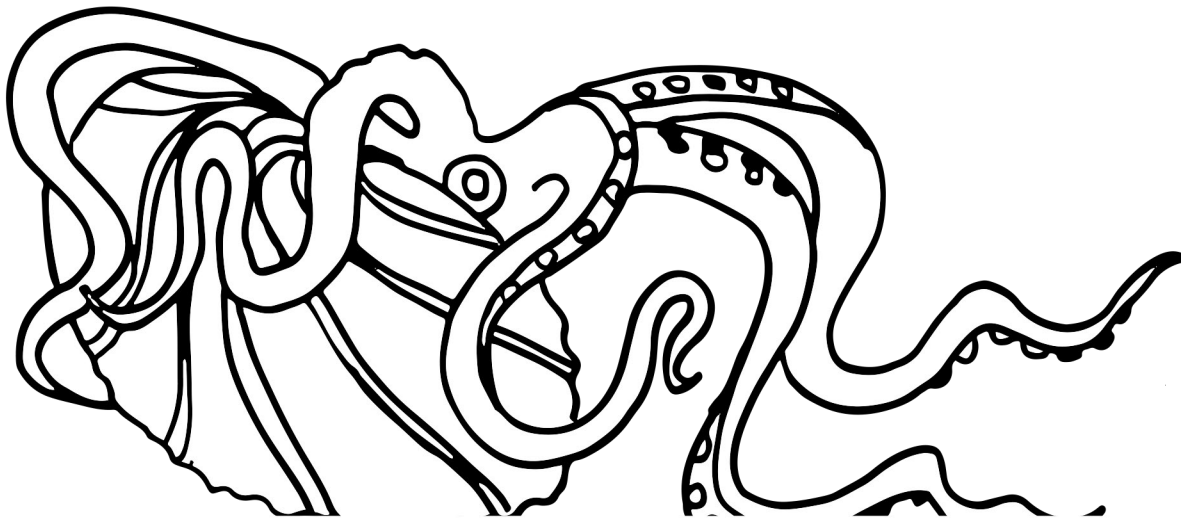


# Jeanne Villepreux-Power

1794–1871

Jeanne Villepreux-Power, “the Mother of **Aquariophily**,” was born in 1794 in Juillac, France. The daughter of a shoemaker, Jeanne traveled to Paris to pursue dress-making. She became quite successful! At the age of 24, Jeanne moved to Sicily to begin a new life with her husband. It was there that she became fascinated with natural history. Jeanne was interested in both **marine** and **terrestrial** animals, but mostly in **mollusks** and their **fossils**. Frustrated that she couldn’t easily study marine life in a controlled setting, she used her extraordinary creativity to invent three types of aquariums. One design most resembles what we know today — complete with a glass enclosure. The other two had the capability of being submerged in water.

With her new inventions, Jeanne took it upon herself to inventory the life of the Sicilian coast (Mediterranean Sea). She spent over ten years observing and studying the *Argonauta argo* (a species of octopus, called greater argonaut or paper nautilus) and discovered that they did in fact create their own shell. In 1839 Jeanne published a book about her experiments, *Observations et Expériences Physiques sur Plusieurs Animaux Marins et Terrestres* (*Physical Observations and Experiments on Several Marine and Terrestrial Animals*), and in 1842 she published *Guida per la Sicilia* (*Guide to Sicily*). Sadly, most of her papers and scientific drawings were lost in a shipwreck between Paris and London — and she then discontinued her research in natural history. In 1997, a crater on the planet Venus was named in her honor.



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# Mary Anning

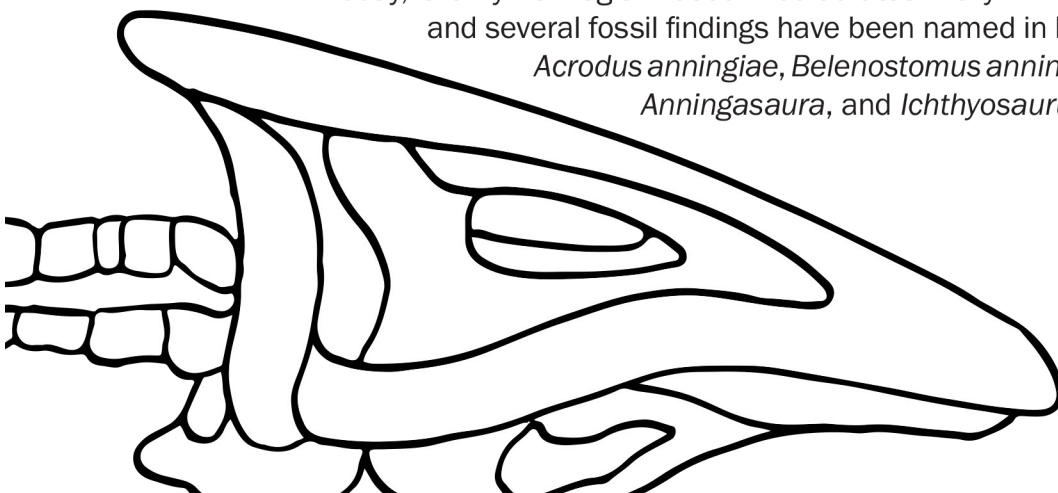
1799–1847

Mary Anning was born in the town of Lyme Regis in southern coastal England in 1799. From the time she was a child, she was destined to become a renowned fossil hunter. Her father, a cabinetmaker by trade, collected fossils both as a hobby and to sell as a means to support his family. Even at a young age, Mary would stand outside at their family table, selling fossils. And certainly at the time of her father's death in 1810, she persevered, stepping right into his shoes, collecting fossils to sell at her own table beside a local inn, to help support her family.

It was at this time Mary and her brother made a huge discovery — a complete *Ichthyosaurus* skeleton. Although she was not given credit for the finding, it amassed a great deal of attention by scientists, followed by publication of an official description in 1817.

Her passion and self-taught skills for finding fossils persisted. Mary discovered a complete specimen of *Plesiosaurus* in 1823, a *Pterodactylus* skeleton in 1828, and later a fossil fish and a specimen of a new species of plesiosaur named *Plesiosaurus marcocephalus*. By 1826 she was able to purchase her own home, complete with a storefront window. Mary opened up shop — Anning's Fossil Depot. This was a pivotal time in humanity's understanding of the history of life on earth and Mary's discoveries played a large part in the development of a new concept called **extinction**. Prominent geologists and paleontologists frequented her shop and even went fossil hunting with her.

Today, the Lyme Regis Museum celebrates Mary Anning Day every year and several fossil findings have been named in her honor, including *Acrodus anningiae*, *Belenostomus anningiae*, the plesiosaur *Anningasaura*, and *Ichthyosaurus anningae*.



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## Glossary

**Aquariophily:** the keeping of fish and other marine organisms in aquariums for leisure study.

**Extinction:** the dying out of a species of organism, either from the past and known through the fossil record, or currently through largely human effects on species' habitats.

**Marine:** having to do with the oceanic parts of the Earth; not the land or air,

**Mollusks:** a soft-bodied invertebrate animal (no bones), either marine or terrestrial, and some with a hard shell; examples include cephalopods (octopus, squid, and relatives), gastropods (slugs and snails), and bivalves (clams and mussels).

**Terrestrial:** having to do with the land parts of the Earth, not the oceans or air.

## A Few More Pioneering Women in Science

**Maria Margarthe Kirch** (1670-1720)  
Astronomer and Mathematician

**Marion Newbigin** (1869-1934)  
Biologist

**Jane Colden** (1724-1766)  
Botanist

**Edith Patch** (1876-1954)  
Entomologist

**Katherine Brandagee** (1844-1920)  
Botanist

**Ann Haven Morgan** (1882-1966)  
Zoologist and Ecologist

**Marg Blagg** (1858-1944)  
Astronomer

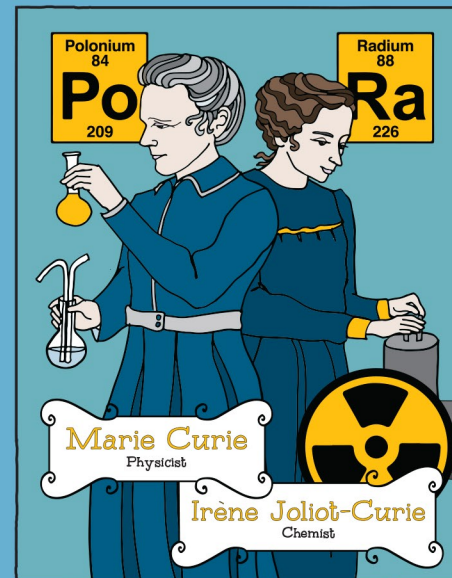
**Marietta Blau** (1894-1970)  
Physicist

**Annie Montague Alexander** (1867-1950)  
Paleontologist

**Doris Mable Cochran** (1898-1968)  
Herpetologist

# THE HISTORICAL HEROINES COLORING BOOK

Pioneering Women in Science from the 18th and 19th Centuries



*The Historical Heroines Coloring Book: Pioneering Women in Science from the 18th and 19th Centuries* celebrates 31 women who passionately pursued their talents in the fields of science, technology, engineering, and mathematics, often in the face of gender discrimination. Each woman scientist is featured on a double-page spread that includes exquisite illustrations by Kendra Shedenhelm and short biographies written by award-winning author Elizabeth Lorayne. How will you color each portrait to best bring these courageous, brilliant, and inspiring women scientists to life?



"A rich and beautifully illustrated celebration of the intelligence, perseverance, and passion of some of the most remarkable women in science. A must-have source of inspiration for all."

Sarita Menon, Founder *Smore Magazine*

"Elizabeth and Kendra both capture the vivacity and strength of these heroines of science. Their calm, confident gazes say to me, 'I did this. You can too'."

Sarah Wise, *500 Women Scientists*

"*The Historical Heroines Coloring Book* encourages the next generation of girls and teens to be pioneers, to dream big, and to believe in themselves."

Lisa McCrohan, MA, LCSW-C, author of  
*Gems of Delight*

"In the 18<sup>th</sup> and 19<sup>th</sup> centuries, a common saying was 'Chemistry enough to keep the pot boiling, and geography enough to know the location of the different rooms in her house, are learning enough for any woman.' The women in this book, however, were steadfast in their beliefs and capabilities to accomplish remarkable advances in fields of learning that have contributed enormously to the benefit of society."

Pamela Swallow, author of *The Remarkable Life and Career of Ellen Swallow Richards*

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