

# Claudius Ptolemy

c. 85–165 AD



**HOW HE AFFECTED THE WORLD** No one had organized information about the world's geography before Ptolemy. He put together what is considered the world's first geography book. He also wrote some of the earliest instructions for making useful maps. Ptolemy's book would become important in the 1400s—and influence Christopher Columbus.



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*As you read the biography below, think about Ptolemy's inventiveness as an astronomer and a geographer during his time.*

Ptolemy was a Greek astronomer and geographer. He is thought to have worked in Egypt during the second century AD. Very little is known about his early life or even what he looked like. However, his explanation for the movements of the planets, moon, and the sun—known as the Ptolemaic system—was widely accepted. The Ptolemaic system placed the earth at the center of the solar system, making it **geocentric**.

Ptolemy's influence on early geography was equally as important. He organized the findings of geographers from the Roman and Persian empires into a single book. He gave **coordinates** to 8,000 places and physical features. He placed them on a numbered grid stretching around the world. Ptolemy's coordinates were early versions of **latitude** and **longitude**.

Ptolemy also included detailed instructions in his book for making maps of the world using latitude and longitude. However, he was aware that he only knew about one-quarter of the surface of the earth.

## VOCABULARY

**geocentric** placing Earth at the center of the solar system

**coordinates** sets of numbers used to specify a location

**latitude** a distance from the center of Earth to a point north or south of the equator

**longitude** a distance from the center of Earth to a point east or west of the Prime Meridian (an imaginary line that runs through Greenwich, England)

In the 1200s a monk rediscovered Ptolemy's writings. In the 1400s printers published his book about geography and included his maps. Ptolemy's book became very influential although some of its contents were inaccurate. For example, his maps showed Asia as bigger than it was and extending farther east. One of Ptolemy's readers, Christopher Columbus, likely used these maps to plan his voyage in 1492.

Ptolemy's geocentric view of the solar system was replaced in 1543. However, his system of maps based on latitude and longitude is still in use today.

### WHAT DID YOU LEARN?

**1. Recall** What was the Ptolemaic system?

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**2. Evaluate** Why were Ptolemy's contributions to geography so important?

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### ACTIVITY

Think about a tool related to astronomy or geography that we use today, such as a telescope or a world atlas. Imagine what it must have been like during Ptolemy's time, before the tool's invention. Write a letter to Ptolemy, explaining this science tool to him and how we use it today.

# Ellen Churchill Semple

1863–1932

**HOW SHE AFFECTED THE WORLD**

Ellen Churchill Semple was one of the first women to make a living studying geography. Semple created a new kind of geography in the early 1900s called human geography. It changed how people viewed the world.



*As you read the biography below, think about how Semple's perseverance helped her to make advancements in geography.*

Imagine if you had to sit outside the classroom of your favorite teacher instead of inside with the rest of your class. This is how Ellen Churchill Semple often attended classes simply because she was a woman.

A very smart and hard-working student, Semple went to Vassar College when she was 15 and graduated in 1882, at age 19. While on a graduation trip with her family, she read a book written by a German geographer named Friedrich Ratzel.

In 1891 Semple tried to enroll in Professor Ratzel's class at a university in Germany. However, the university only allowed men to take classes. Semple received special permission to attend Ratzel's class—as long as she sat outside the classroom and listened through an open door.

When she returned to the United States, Semple wrote articles about geography for many journals. Geography was a new field in the United States, and most scientists focused on **physical geography**. However, **human geography** fascinated Semple.

**VOCABULARY**

**physical geography** study of the world's physical features

**human geography** study of world's people, cultures, and landscapes

**fieldwork** collecting information through interviewing and observing people

In the mountains of Kentucky—her home state—she studied people and their way of life. It was an example of a geographer doing **fieldwork**, which was very unusual at the time.

Semple's first book was published in 1903. Many colleges used it as a textbook. In it, she described how the physical geography of the United States influenced its human geography. For example, she showed how the building of railroads influenced the building of cities. She continued writing while traveling 46,000 miles throughout Europe, Africa, and Asia. When she returned to the United States, she taught geography at several colleges and universities.

In 1921 the Association of American Geographers elected Ellen Churchill Semple as its first woman president. Semple remains an important figure in the field of geography today.

### WHAT DID YOU LEARN?

**1. Recall** How did Ellen Churchill Semple conduct fieldwork?

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**2. Express and Support a Point of View** What do you think was Ellen Churchill Semple's greatest accomplishment? Provide reasons or examples to support your point of view.

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### ACTIVITY

Conduct research to find out more about what geographers do. Write a paragraph describing a research project that a geographer could do in your community. Give details about the type of geography—human or physical—and the fieldwork that could support the research.