

An excerpt from

Galen and the Gateway to Medicine

by Jeanne Bendick

Who was Galen?

Galen was a doctor who practiced medicine almost 2,000 years ago.

He was doctor to four Roman emperors, so Roman history could have changed if he made mistakes.

He was a doctor who tended the wounds of gladiators -- wounds by sword, spear and the teeth of wild animals.

He was a doctor who had to learn about the human body from studying pigs and monkeys.

He was a doctor who invented and recorded so many medicines that some are still used today.

He was a doctor whose theories seemed so accurate that his ideas were taught and followed for almost 1,500 years.

He was Dr. Galen (GAY-len), the most famous doctor and scientist in the Roman empire.

Galen was born on September 22, in the year 129 (or maybe 130) in the Greek city of Pergamum (PUR-gum-um). In Galen's time, Greek people had only one name, but Romans had a string of names. The Roman emperor, in 129, was named Publius Aelius Hadrianus. But he is known, simply, as Hadrian. (HAY drey-an)

About 250 years before Galen was born, the last ruler of Pergamum had given his city-state to Rome on the condition that Rome would protect its independence. But the people who lived there still considered it a Greek city.

By the time Galen was born, the Romans had conquered all the lands around the Mediterranean Sea, much of Europe (including England), part of Africa, the whole Middle East and some of Asia. If you look at the map you can see how huge the Roman Empire was. You can see the city of Pergamum on the map, twenty miles from the Aegean (ih-JEY-en) Sea. (Today, Pergamum is called Bergama. It is in Turkey.)

What was so special about being a doctor in the second century? There were a lot of doctors then, but many of them had little medical training. A few did go to medical school. Others learned to be doctors by following other doctors around as apprentices, in much the same way as ironsmiths or weavers learned their trades. They learned by watching. There were no formal requirements for being a doctor -- you just announced that you were one and that you were in the doctoring business. If you were fortunate enough to cure somebody you attracted more patients, otherwise you soon tried another profession.

Doctors might wander from place to place like traveling tradesmen. Some set up stalls in the marketplace, where they gave advice, sold cures, and offered first aid for simple problems.

In the second century people had many of the same health problems and diseases we have now, but there weren't many ways of treating them. Garlic and honey were the most trusted cures. Everyone ate garlic, raw and cooked. They drank garlic juice, rubbed it on, and wore garlic cloves around their necks. Honey was eaten, made into drinks, and smeared on wounds.

Doctors were only beginning to have ideas about what caused diseases. And even if they had known, they didn't have the medicines we have today. There were no vaccines, antibiotics, penicillin or sulfa drugs. There were no anesthetics. There wasn't even aspirin.

No one could see inside a living body.

X-rays and body scans were thousands of years in the future. It would be more than a thousand years before someone invented the thermometer for taking temperatures or the stethoscope for listening to hearts and lungs. Nobody had even invented a proper clock with which to time a pulse. (You couldn't time a pulse with a sun dial, a sand clock or a water clock.)

The workings of a human body were a mystery.

Was there some spirit inside that made people alive?

What, really, did the heart do? Did it control thinking? Or was it just a furnace to heat the blood?

Where did blood come from? How did blood begin? How did it move through the body? Were there different kinds of blood?

Where was air in the body? Was it in the veins?

What did the lungs do? Did they cool the heart?

Did something in the liver make you brave?

Was gloominess centered in the stomach?

There was so much to figure out.

Galen's ambition was to learn everything about the human body. He studied and taught and wrote about anatomy -- how a body is made, how its parts are arranged and how the parts work together.

Galen believed that anatomy was the foundation of medical knowledge. But in Galen's time, dissection of humans -- the cutting open of a dead body -- was forbidden. This had not always been so, but now Greek religion said that dissecting dead people was dishonoring the dead. So most of what Galen knew about anatomy he learned from studying oxen and dogs, monkeys and pigs. Many of his ideas about how human body parts functioned were based on the animals he studied. (You can see how this led him to make some mistakes.)

For years, Galen was doctor to the gladiators who fought in the arena, so he learned a lot about treating wounds, broken bones and other physical injuries. He had good ideas, too, about how to keep those athletes healthy. He was an early expert in sports medicine.

As Galen learned more about doctoring, he thought of new ways to treat the diseases of his patients, experimenting to find cures for physical and even mental illnesses.

He mixed and measured and invented medicines from herbs and minerals, and he wrote down his prescription recipes and his advice on their use. He wrote thirty books on pharmacy -- the science of preparing and prescribing drugs.

The Greeks loved science. They believed that an understanding of the world they lived in depended, first, on careful observations of the world around them. You had to gather the facts. (We call those facts data.)

You had to think about your data in an orderly way, and then you had to ask yourself questions about what those facts meant. (You can't get an answer before you ask a question. Scientists say that often questions are more important than answers.)

The answers are called a theory. A theory is an explanation of the facts, and the Greeks had theories about almost everything. Theories can change as new facts emerge because science is an ongoing search for truth.

Galen wanted to make medicine a science. He gathered, studied and summarized the ideas of the Greek scientists and physicians who lived before him. He was eager to connect known facts with his own ideas and he was sure he could do that in a logical way. He also wanted to separate superstition from real knowledge.

Galen was the most famous and important doctor of his time. He was also the most important doctor for almost fifteen centuries after he died.

During his lifetime he wrote more than three hundred books and articles. His writings were the most complete encyclopedia of medicine in the ancient world.

After he died, doctors still read his books and used his prescriptions. Scholars translated Galen's Greek writings into other languages. As centuries went on, medical schools all over Europe taught his theories. For almost 1,500 years most people believed that Galen had learned everything there was to know about medicine.

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