

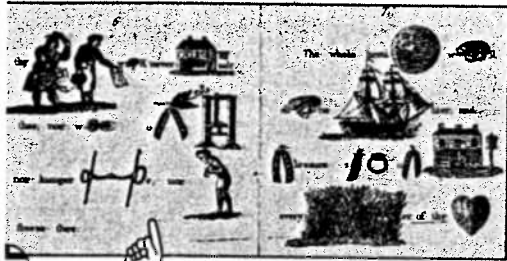
Young Ben

Born in Boston in 1706, Franklin was the 15th of 17 children. He went to school for just two years before going to work in his father's soap and candle shop. At that time, school was a luxury that most tradespeople couldn't afford. But Ben hated soap-making, so his father apprenticed him to his older brother James to learn printing. As an apprentice, Ben had to promise to work for James until he was 21—nine long years away.

Ben loved to write, but he knew

James would never print his writings if he realized they were the work of his 16-year-old brother. So Ben signed his witty essays "Silence Dogood" and slipped them under the printing shop door. Unknowingly, James published several of them in the *New England Courant*, the newspaper he had started.

The brothers did not get along well. After one bitter quarrel, Ben ran away. He journeyed first to New York and then to Philadelphia, the place he called home for the rest of his long life.



Try This!

▲ Ben created many rebuses, puzzles made up of pictures or sym-

bols. Can you figure this one out? In case you can't, the "translation" is on the back.



◀ AS SOON AS HE reached Philadelphia, hungry young Ben bought three enormous rolls. He then walked through the city, holding one roll under each arm while he munched on the third. A young girl who stood in her doorway that morning laughing at Ben was Deborah Read, who later became his wife.

◀ BEN WAS BORN IN Boston, in the colony of Massachusetts. In the early 1700s, the land along the Atlantic coast, occupied by settlers and Native Americans, was divided into 13 colonies that were ruled by the English king. To the west lay a vast land inhabited by Native Americans.

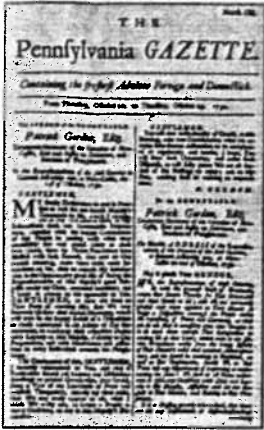


▲ BEN LOVED TO experiment. One day, hanging onto his kite string, Ben lay on his back on

the water as the wind pushed the kite and the kite pulled him for almost a mile.

A MAGNIFYING GLASS MAY HELP!

Printing & Publishing



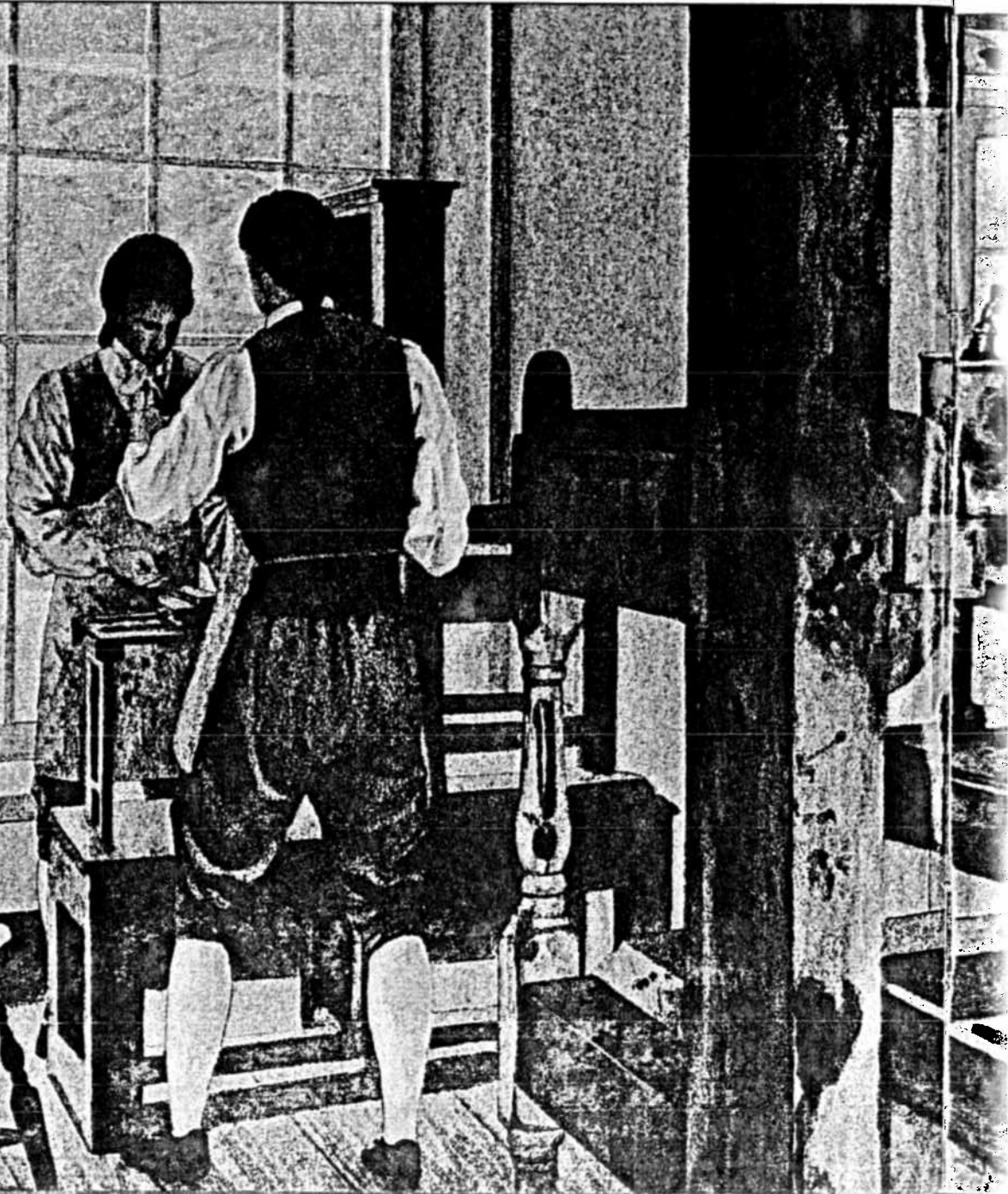
Ben came to Philadelphia to be a printer, and a printer he became. In this profession, he accomplished a great deal. He made the first copperplate printing press in America. As owner and printer of the *Pennsylvania Gazette*, he began printing local news about folks living in Pennsylvania—something uncommon at that time. When his *Gazette* became the

Poor Richard Says:
"Make haste slowly."

most important newspaper in the colonies, he hired riders on horseback to deliver the news quickly.

Franklin turned out dozens of essays, articles, and pamphlets, thousands of letters (to more than 4,000 correspondents!), a four-part autobiography, and *Poor Richard's Almanack*, a popular annual publication—and one that many homes cherish today.

Printing in the 18th century demanded both patience and strength. Ben set type for the *New England Courant* and the *Pennsylvania Gazette* and also helped to print them. Type was set by hand, locked into metal frames, and laid on the "bed" of a handpress. A leather ball stuffed with hair was used to apply ink. Then a sheet of dampened paper was laid over the type and covered over. Next, the flat upper plate of the press, called the platen, was screwed down onto the bed, pressing the paper against the type. It took two men to run the press, and printing was a long, laborious process.



Curious Ben

What made Ben Franklin, with only two years of schooling, a leading scientist of the 18th century? The answer: curiosity. "Why does it do that?" Ben would ask. "How does that work?"

When he noticed that gypsum (a chalklike substance occurring naturally in rocks) spread on a field made grass grow greener, he suggested farmers try putting it on their crops. As a result, he's credited with introducing the notion of artificial fertilizer. And Franklin was one of the first to realize that lead poisoning was the cause of a disease that commonly destroyed the health of printers, painters, and plumbers.

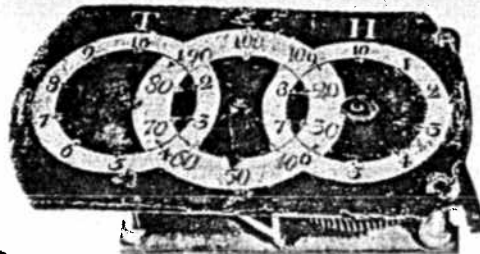
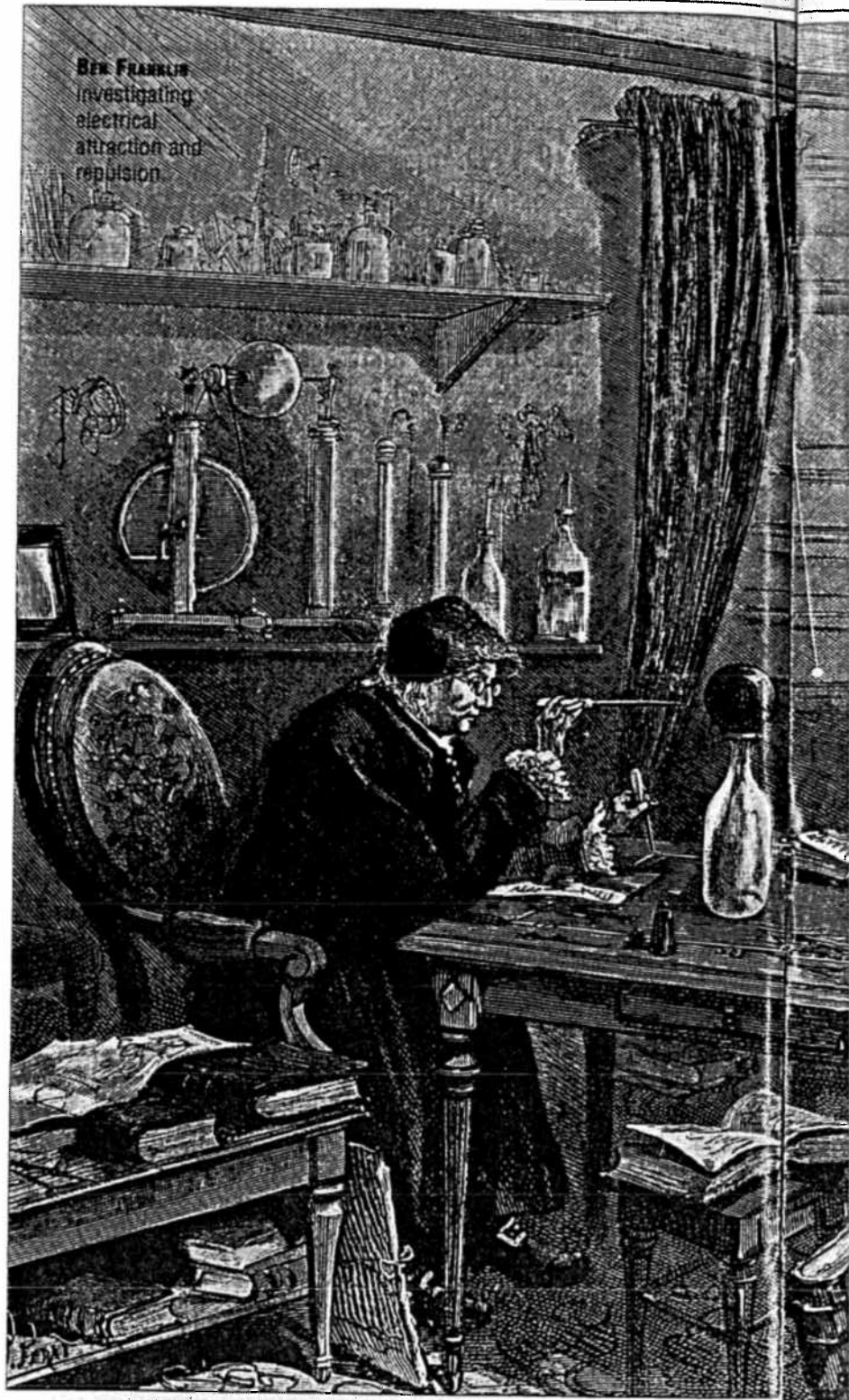
When Ben decided to find out why it took so much longer to sail from England to America than the other way around, he



talked to whaling captains from Nantucket. They told him about what we now call the Gulf Stream, a rapid current that runs through the Atlantic. Franklin then set out to chart this current. On his many transatlantic crossings, he carefully recorded the water temperature several times a day, discovering that, "a stranger may know when he is in the Gulf Stream by the warmth of the water, which is much greater than that of the water on each side of it."

Poor Richard Says:

"No gains without pains."



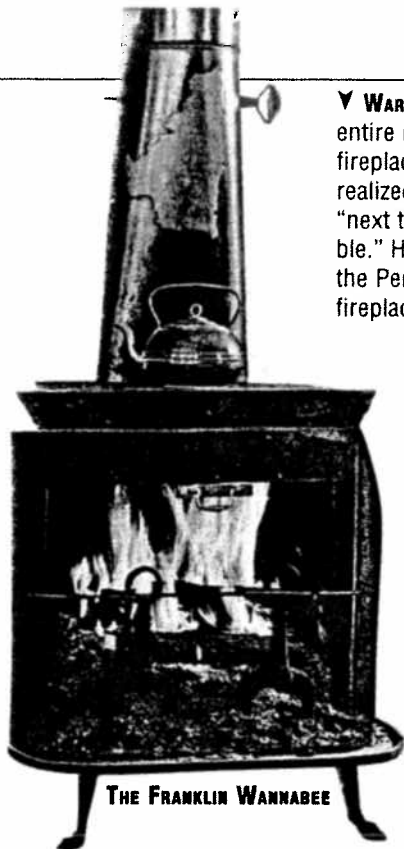
◀ FRANKLIN is credited with inventing this odometer. When fixed to his carriage, it accurately measured road miles.

Curious cont.

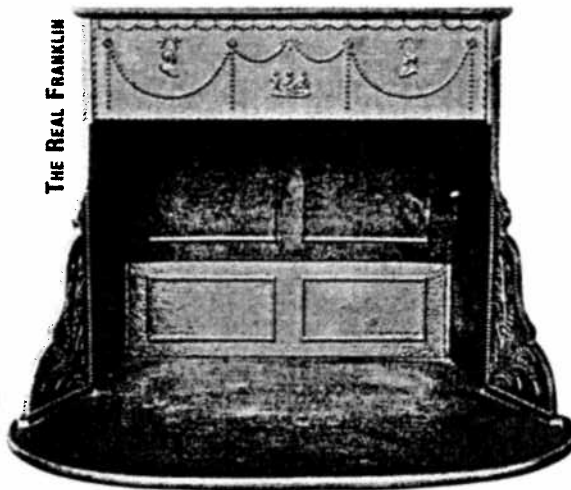
▼ **WARMING AN** entire room with a fireplace, Ben realized, was "next to impossible." His solution: the Pennsylvania fireplace, an open

iron box with air chambers on each side. The box fit into a fireplace and allowed heat to radiate more efficiently into a room. A modified

version of this, called the Franklin stove, was devised by a scientist friend of Franklin's and can be found in many homes today.



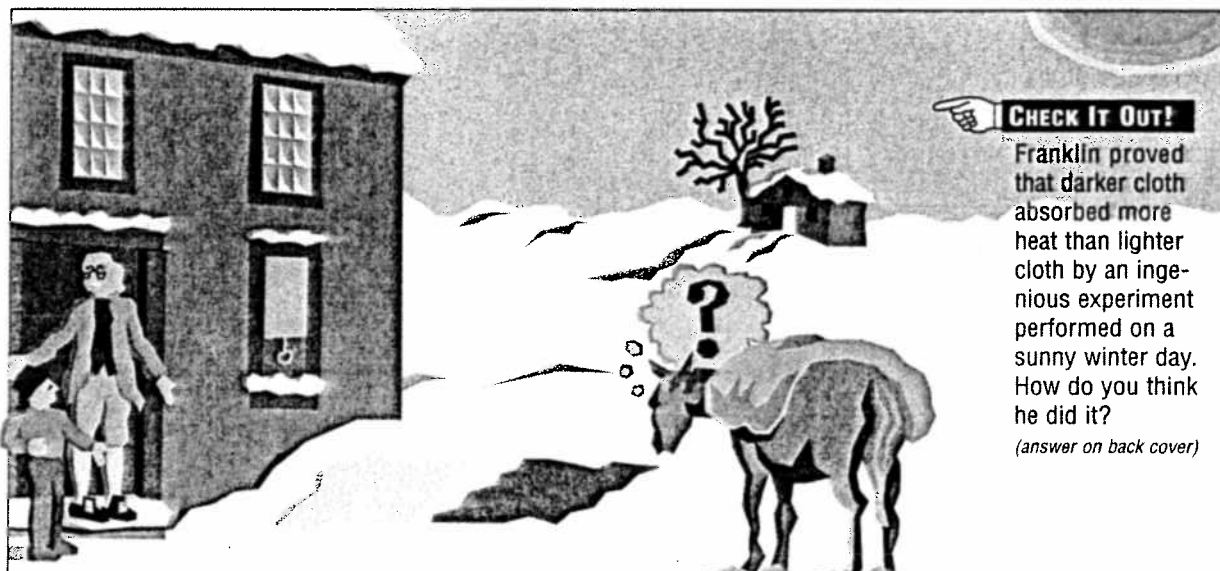
THE FRANKLIN WANNABEE



THE REAL FRANKLIN



▲ **THIS GENERATOR**, which produced static electricity, was made to Ben's specifications.



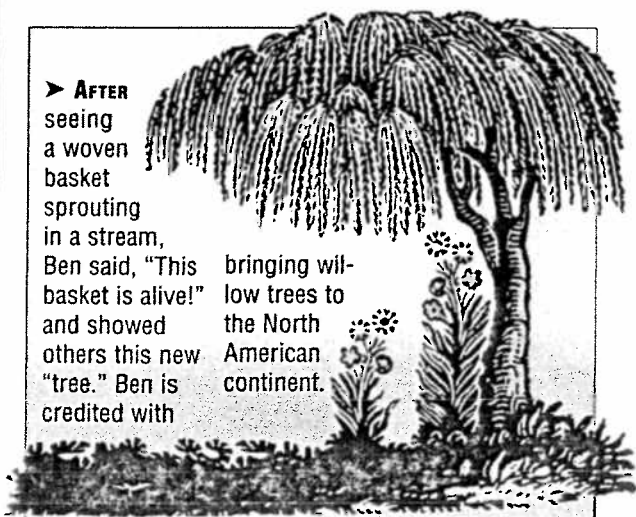
CHECK IT OUT!

Franklin proved that darker cloth absorbed more heat than lighter cloth by an ingenious experiment performed on a sunny winter day. How do you think he did it?

(answer on back cover)

► **AFTER** seeing a woven basket sprouting in a stream, Ben said, "This basket is alive!" and showed others this new "tree." Ben is credited with

bringing willow trees to the North American continent.



► **FRANKLIN CLAIMED** to have developed a smokeless candle and invented a candle made from whale oil. It burned brighter and lasted longer than ordinary candles and, he maintained, it left no grease spots when it dripped.



Practical Ben

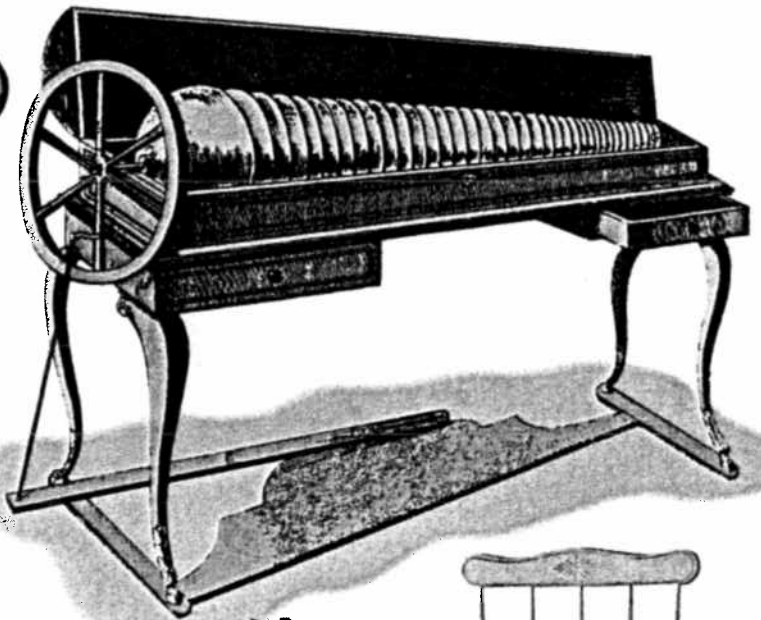
Ben Franklin made many discoveries about electricity. But he was best known for demonstrating the electrical nature of lightning. Franklin, however, did not seek knowledge just for its own sake. He thought it should serve some useful purpose. And the practical product of the great kite-and-key experiment was the lightning rod—a

pointed iron rod that was raised above a rooftop. During storms, the rod would attract lightning and lead it, by wire, harmlessly into the ground.

Lightning rods went up everywhere during the 1750s, increasing Franklin's reputation but not his bank account. Franklin profited little from any of his inventions. He sought patents for none of them and allowed anyone to copy them.

Poor Richard Says:
"Well done is better
than well said."

► **FRANKLIN INVENTED** a musical instrument—the armonica. It was made of 37 glass bowls, which rotated in a case filled with water. When touched, the wet rims produced soft, warbling sounds. Both Mozart and Beethoven wrote music for it.



► **BEN DESIGNED** this chair with a "tabletop." The writing arm can be swung back.



◀ **BEN INVENTED** this chair for use in his library. When the seat is turned up, it becomes a stepladder.



Ben, the Statesman

Not only was Franklin a printer, a publisher, a writer, an inventor, and a scientist, he was also one of his country's greatest leaders.

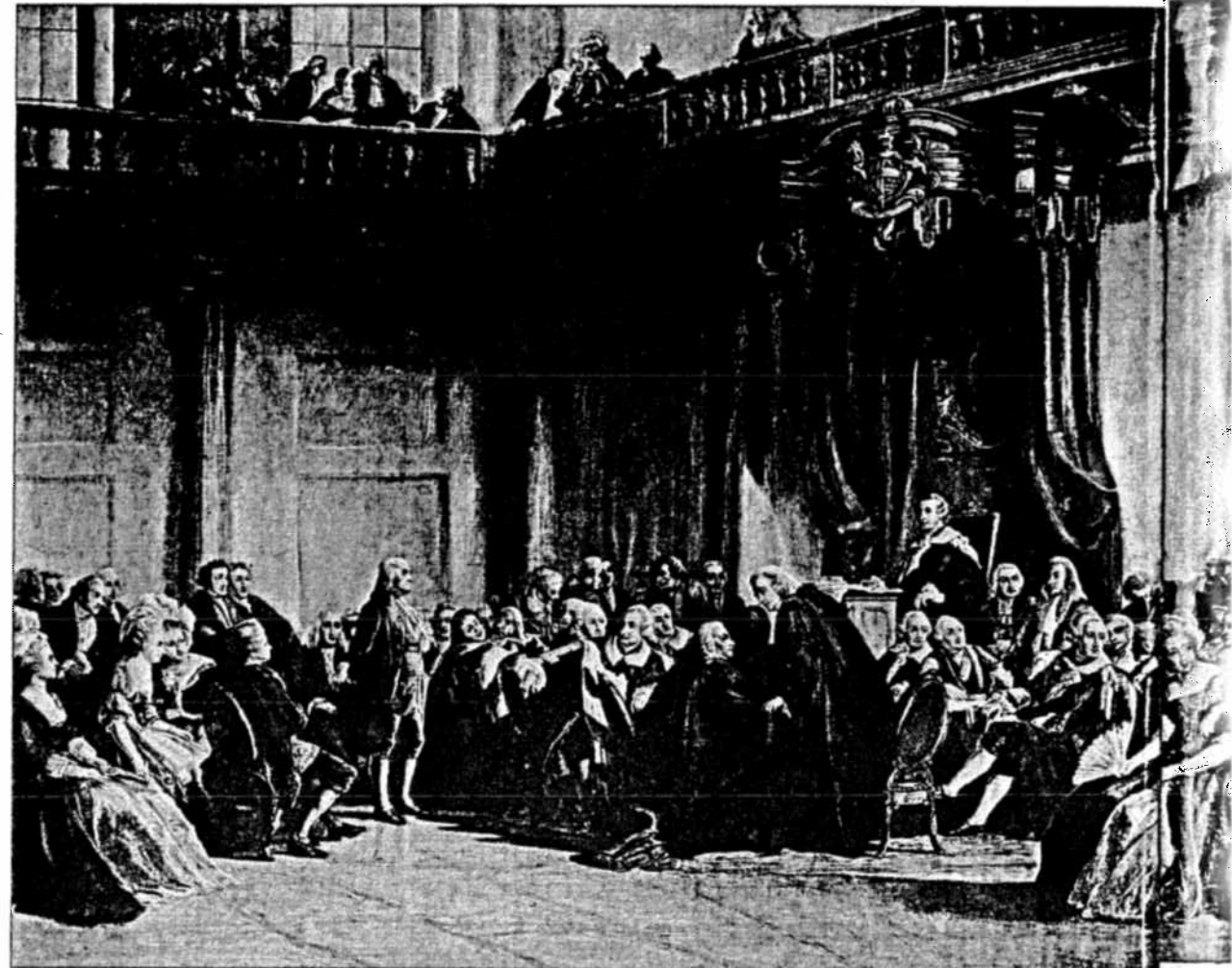
In 1736, he was appointed clerk of the Pennsylvania Assembly, the colony's gov-

erning body. He was elected to Philadelphia's City Council in 1748. In 1751, he joined the Pennsylvania Assembly as one of the city's representatives. One of his accomplishments was negotiating a major treaty with Native Americans. Later, he organized the defense of the Pennsylvania frontier and was chosen colonel of Phila-

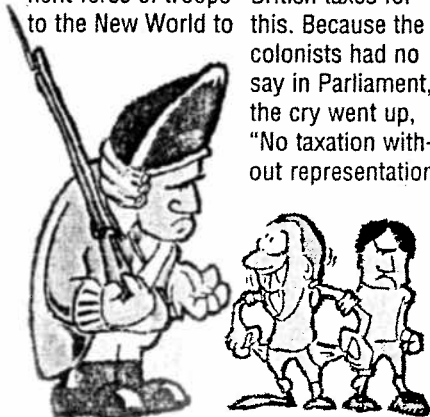
Poor Richard Says:

"Early to bed
and early to
rise makes a
man healthy,
wealthy,
and wise."

► **FOR MOST OF BEN** Franklin's life, his America was 13 colonies ruled by England. In 1764, Franklin, as representative of Pennsylvania, pleaded the cause of the Pennsylvania Assembly in front of the king. The Assembly felt that the king's representatives in Pennsylvania were causing the people of Pennsylvania great hardships. In 1774, Ben was viciously attacked before the Privy Council (advisors to the king) and dismissed from his post as deputy postmaster. During these years, he fought to keep peace, both in England and at home.



▼ **IN THE LATE 1760s** Parliament decided to send a permanent force of troops to the New World to keep peace, and it demanded that the colonists pay British taxes for this. Because the colonists had no say in Parliament, the cry went up, "No taxation without representation."



► **ON APRIL 18, 1775**, British troops left Boston to seize weapons at Concord. Paul Revere and others spread the word: "The British are coming." No one knows who fired the first shot, but within minutes, the first battle of the American Revolution was over.

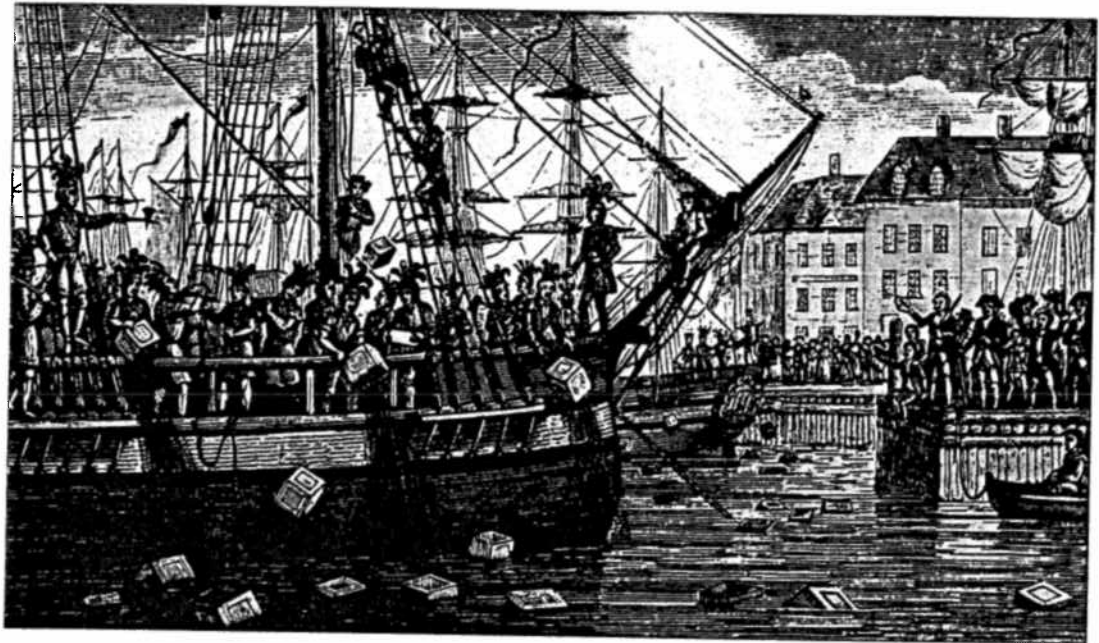


delphia's militia regiment. In 1754, Ben drew up the first plan to unite the colonies under one government. Although his plan was rejected by the colonial assemblies and by the British crown, it laid the foundation for what was to become the United States of America.



◀ In 1765, England passed the Stamp Act, which required colonists to buy stamps to put on newspapers, magazines, and even almanacs. The colonists felt this was unfair, especially since they

had no representative in the British Parliament, where the laws were made. While in England, Franklin fought hard against the Stamp Act and helped win its repeal.



▲ In December 1773, patriots dumped boatloads of tea into Boston Harbor to protest Britain's tax on tea and other household goods. After this uprising, called the Boston Tea Party, revolution became inevitable. England responded with measures so harsh that the patriots soon began arming themselves.



◀ As part of the Second Continental Congress, Ben served on many committees during the war, including the committee that wrote the Declaration of Independence, the document that explained why America could no longer remain tied to England. Before John Hancock (the first signer of the Declaration) signed the document, Ben said, "Gentlemen, we must now all hang together, or we shall most assuredly hang separately."

