

# WEATHER

Meet two of history's most famous—and

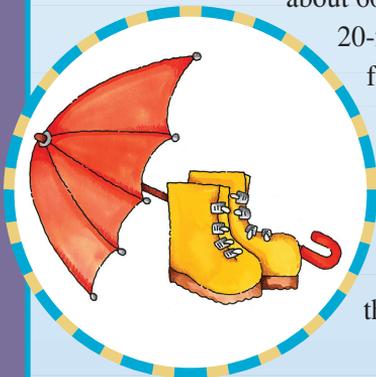
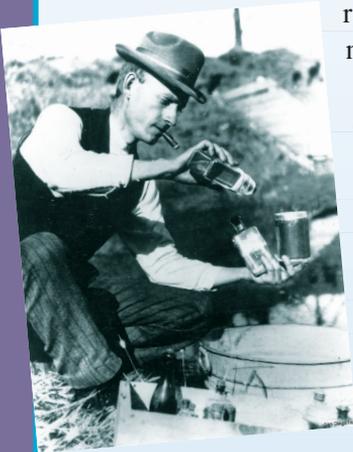
## The Rain Man

**I**n 1915, southern California was suffering from a drought and the people of San Diego were worried. They needed rain, and they wanted **CHARLES MALLORY HATFIELD** to make it happen.

For years, Charles had conducted experiments and studied weather books, including one called *The Science of Pluviculture*, or rainmaking. He never claimed that he could make rain; he said that he could release rain when the conditions were right. He called himself a “moisture accelerator,” but some people called him a “cloud coaxer” and “water magician.” He spoke with such confidence that several communities had hired him, so the folks in San Diego did, too.

In December 1915, the Morena dam and reservoir, which held San Diego's water supply, was low, at about one-third full. The city council wanted Charles to fill the reservoir and agreed to pay him \$10,000 if he did. Charles and his brother went out to the dam, which was about 60 miles outside of the city, set up camp, and built a 20-foot-tall tower with a platform. They lit a fire and for days boiled a secret mixture of chemicals that evaporated into the air.

Their formula worked—but too well. Rain began on January 10, 1916, but it didn't completely stop for 17 days. Roads flooded, and bridges and railroad tracks were washed away. People died, and thousands of homes were destroyed in what became





# WIZARDS



**mysterious—meteorological magicians.**



known as “Hatfield’s Flood.” In the end, 28 inches of rain fell! Charles was warned that some people might want revenge. Fearing for their safety, he and his brother took down the tower and fled.

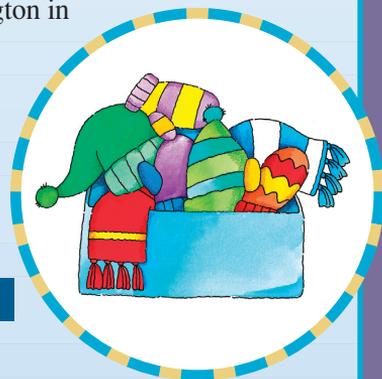
Later, the city council refused to pay the brothers. Charles said that he was sorry, but the damage wasn’t their fault. They had done only what they had been asked to do.

We may never know whether Charles brought the rain to San Diego. Prior to his death in 1958, he never discussed his formula with anyone but his brothers and told the public only that he had used 23 chemicals. Today, a plaque at Lake Morena County Park in Campo, California, honors his efforts.

## The Ice Man

**I**RVING LANGMUIR was so curious as a child that he set up his first laboratory in the corner of his bedroom. For him, science was fun. Years later, he became interested in weather while researching ice formation on Mt. Washington in New Hampshire.

One day in 1946, Irving was in his laboratory, in a special freezer built to simulate cloud conditions.



**continued**

His assistant brought a block of dry ice (frozen carbon dioxide) into the freezer to try to lower the temperature. Suddenly, a small snowstorm began! They discovered that adding dry ice to cold clouds turns the clouds' water vapor into ice and rain.



Irving believed that he could use this discovery not only to make rain but also to change the paths of hurricanes and affect weather patterns. Many people got excited about it, including the U.S. government, and nearly 200 experiments were conducted.

Unfortunately, Irving's technique seems to work only in special, limited situations—like his laboratory.

## IDEAS That Are ALL WET

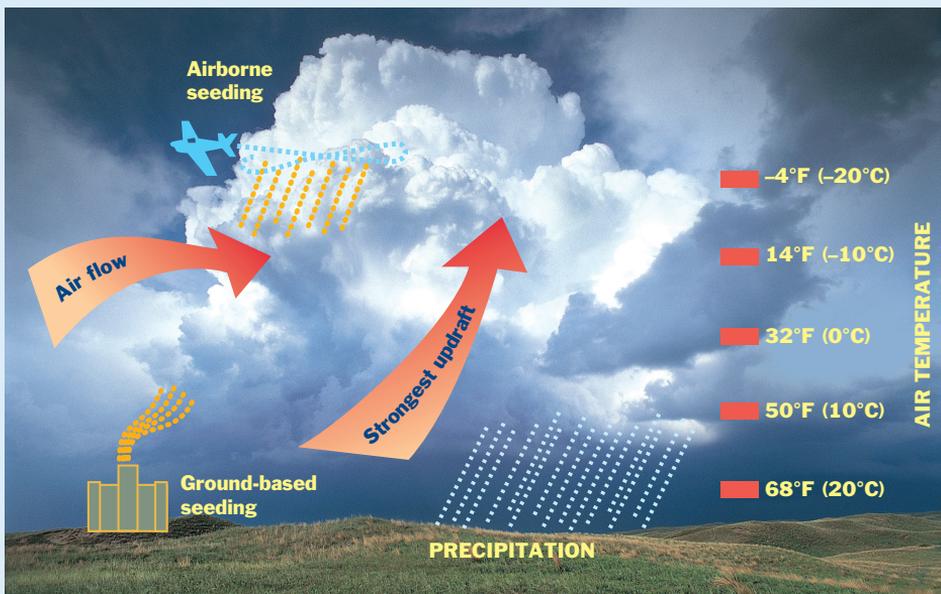
▶▶ In ancient times, some people believed that bad smells—such as those from dead bodies after a battle—caused rain. Others believed that explosions from weapons and the like were to blame. A man named Edward Powers wrote in his book, *War and the Weather*, that many Civil War battles produced rain.

▶▶ Some people thought that heat—such as fires—produced rain. In the 1850s, a meteorologist named James Espy even

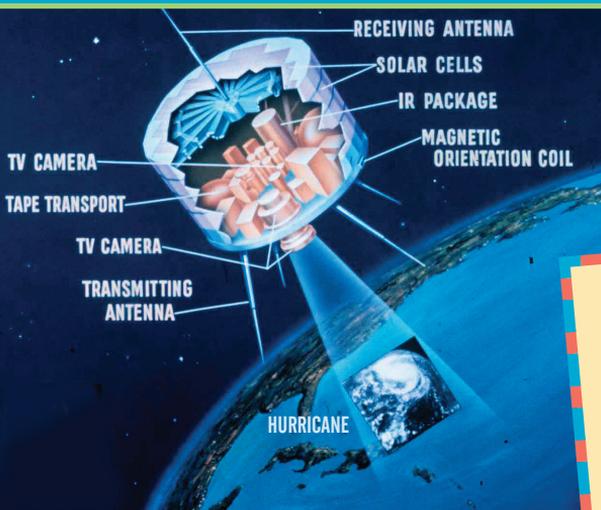
suggested that rain could be made by starting huge forest fires.



► Today, airplanes are used to “make rain” by seeding, or sprinkling, clouds with dry ice or chemicals such as silver iodide, which has a chemical structure close to that of ice. However, nobody can prove that cloud seeding is widely effective and worth the expense. One problem is that it is hard to tell whether seeding produced rain or a cloud was simply ready to produce rain by itself.



## TIROS Meteorological Satellite



► Modern scientists are using radar and satellites to study clouds more closely to determine once and for all how well cloud seeding really works.

### WHAT'S THE WEATHER GOING TO BE?

Sun? Rain? Snow? Find out what to expect right over your head at [Almanac4kids.com/weather](http://Almanac4kids.com/weather).