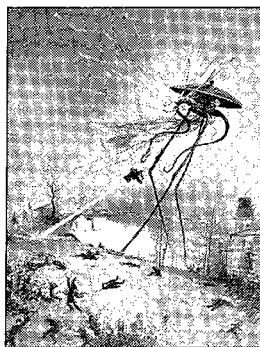


on a large scale. Her readable, humane study underscores the difficulty of coming up with answers. She can propose nothing more—or less—than a plea for a system that treats mentally ill people as individual medical patients instead of as statistics.

Science & Technology

MARS BECKONS: The Mysteries, the Challenges, the Expectations of Our Next Great Adventure in Space. *By John Noble Wilford. Knopf. 244 pp. \$24.95*

"Someone's crawling out of the hollow top—someone or... something... I can see the thing's body now... I can hardly force myself to keep looking at it, it's so awful... with saliva dripping from its rimless lips that seem to quiver and pulse." This description of Martian invaders, from Orson Welles's 1938 *War of the Worlds* broadcast, terrified the country, in part because it was then accepted as common knowledge that life existed on Mars. If Earth had a twin anywhere, it was Mars, with its similar axial tilt, its polar caps, and its 24-hour days. In 1877, the astronomer Giovanni Schiaparelli sighted a system of "canals" on Mars. They seemed to indicate intelligent life and the means to sustain it, water. Even after 1947, when spectroscopy (an analysis of the light waves reflected off the planet) determined that the atmosphere consisted primarily of carbon dioxide and very little oxygen, scientists and lay people still believed that some forms of life existed on Mars. Then in the 1965 space probe, Mariner 4 swung within 6,118 miles of the planet for a closer look.



What it found, says Wilford, a two-time Pulitzer Prize winner and a science correspondent for the *New York Times*, was an arid land whose "canals" were nothing but an optical illusion. Finally, in 1976, the Viking spacecraft touched down on

the surface of Mars and relayed back actual images of the planet. Mars was stranger than science fiction: Although half the size of Earth, it had sand dunes vaster than the Sahara, a grand canyon as long as the distance from New York to Los Angeles, and a volcano twice the size of Everest. But there was no sign that Mars could support life. Its surface lacked the protection of a dense atmosphere and was so heavily bombarded by radiation that no carbon-based forms (i.e. life as we know it) could possibly survive. Even astronomer Carl Sagan, who had long held out hope of finding life on the "red planet," acknowledged that Mars's surface was "antiseptic with a vengeance."

Yet Mars still beckons. President George Bush has called for America to land a man on Mars within the next 30 years. Wilford seconds this proposal, though he makes no compelling case for the mission. Oddly, in envisioning the exploration of Mars, Wilford ignores costs. In the past two years the National Aeronautics and Space Administration's budget has risen by 36.6 percent, even though the agency initiated no new projects. To get humans to Mars, a roundtrip of 48 million miles, could cost an almost inconceivable \$400 billion. Now, three decades after John F. Kennedy exhorted Americans to send a man to the moon, we may be reaching the outer limits of space exploration: the ability to pay for it.

HISTORY OF SYPHILIS. *By Claude Quézel. Trans. by Judith Braddock and Brian Pike. Johns Hopkins. 342 pp. \$35.95*

There are two histories of syphilis. According to the popular version, scientists and doctors waged a long war against the disease, gaining victory with the 20th-century discovery of penicillin. Claude Quézel, a historian at the Centre nationale de la recherche scientifique in Paris, has written a rather different story.

For 500 years, Quézel says, society has failed to gain control over a disease spread by a fragile organism that can barely survive a few hours outside the body. Although the syphilis bacterium can now be killed by a few injections, the disease is not only alive but spreading. The 70 million reported cases worldwide represent only the tip of the iceberg.