

back by, for example, persuading the government to appoint members more sympathetic to their views to the board of health.

A more important cause of the environmentalists' undoing was the new germ theory of disease developed by Louis Pasteur and other European scientists during the 1870s and '80s. The discovery that germs are the main source of disease focused attention on sewage and reduced the pressure to regulate industrial pollutants. Indeed, the effluent from New England's wool and paper mills, tanneries, iron works, and other manufactur-

ing works took on a whole new character. In the late 1880s, the Connecticut Board of Health concluded that "inorganic chemicals [are] harmless, or positively beneficial in counteracting the organic matter [sewage]."

All was not lost. Over the following decades, efforts were made in many states to bring sewage dumping under control. Perhaps the most important impact of germ theory, however, was the displacement of the reformers' broad view by a new and more narrowly technical view of the impact of environmental degradation.

Mammal Mommie Dearests

"Natural-Born Mothers" by Sarah Blaffer Hrdy, in *Natural History* (Dec. 1995), American Museum of Natural History, Central Park West at 79th St., New York, N.Y. 10024.

Despite Medea and other, more recent murderous moms, nothing is more synonymous with nurturing than motherhood. But researchers who study mammal mothers of various species now take a much more expansive view, reports Hrdy, an anthropologist at the University of California at Davis. Motherly behavior that just a few decades ago would have been looked upon as deviant is now thought to be as "natural" as tender loving care.

Motherhood, Hrdy writes, "is not as straightforward a matter as just turning on the milk. Mothers have to factor in recurring food shortages, predators, and social exploitation by members of their own species. Faced with poor conditions, a mother must weigh babies in hand against her own well-being, long-term survival, and—most important—the possibility of breeding again under better circumstances."

Take the cotton-top tamarins of South America, for example. These pint-sized monkeys can give birth as often as twice a year to twins whose combined weight adds up to one-fifth of the mother's. Only with the

help of fathers, older offspring, or transient adults, who carry the babies when the mother is not suckling them, can the mothers cope. A researcher at the New England Primate Center found that 57 percent of cotton-top mothers without such help abandoned their young.

Abandonment is but one strategy. A pregnant house mouse that encounters a strange male likely to pose a threat to her offspring "may reabsorb her budding embryos," Hrdy says. Among the langur monkeys of India, a young mother with many fertile years ahead of her may, under persistent assault from strange males, "simply stop defending her infant, leaving more intrepid kin—usually old females that have not reproduced for years—to intervene."

Other mammals stretch the meaning of motherhood even further. A biologist who monitored a population of black-tailed prairie dogs in South Dakota found that low-weight mothers sometimes abandoned their litters, letting other prairie dogs eat the pups and occasionally even joining in the feast themselves.

Newton's Solitary Genius

"Presiding Genius" by Peter Richards, in *CAM* (Michaelmas Term, 1995), Univ. of Cambridge Development Office, 10 Trumpington St., Cambridge, England CB2 1QA.

Sir Isaac Newton (1642–1727), the greatest mathematician who ever lived, spent 35 years at Trinity College, University of

Cambridge. But he "was too much his own man for Trinity to recognize his genius straightaway," writes Richards, editor of