The Dutch microscopist Antony van Leeuwenhoek (1632–1723) was the first to see living protozoa, sperm, and bacteria. The cover this month is a drawing of bacteria from his mouth, published in 1695 in a collection of observations entitled *Arcana Naturae Detecta* (Secrets of Nature Revealed).

Leeuwenhoek remains an elusive figure for modern biologists, although a great deal is known about his life and work. To begin with, his name is a source of puzzlement, with its unfamiliar excess of vowels. A reasonably close approximation to the Dutch pronunciation, using English spelling, is LAY-WEN-HOOK. He is sometimes credited with inventing the compound microscope, even though he himself never used one, and the invention took place 30 years before he was born. Leeuwenhoek made all his observations with minute single lenses—magnifying glasses—held close to his eye. For ease of handling, these lenses were mounted between two metal plates, which also accommodated an adjustable pin on which specimens were placed. Living protozoa and bacteria were observed in water inside a short length of capillary tubing. Leeuwenhoek made several hundred of these simple microscopes with lenses of different sizes, the smallest of which had a focal length of about 1 mm and magnified 200 times. Leeuwenhoek was not an ignorant dilettante, as he is sometimes portrayed. It is true that he spoke only Dutch, that he was a draper by trade, and that he seldom traveled far from home. But he was a prominent citizen in Delft, who corresponded with scientists in several countries, particularly with members of the Royal Society of London. He became quite famous in his long lifetime. He was elected a full Fellow of the Royal Society in 1680, and he was visited by several heads of state, including Peter the Great of Russia, who, incidentally, could converse with him in Dutch. Many textbooks make the obscure statement that Leeuwenhoek studied *animalcules*. This archaic English word is nothing more than a back-translation from *animalcula* (see the cover), which is the Latin rendering of Leeuwenhoek's word *Dierkens*, meaning little animals. In modern English, Leeuwenhoek studied *microorganisms*, among which various species of protozoa, algae, nematodes, rotifers, *Hydra*, and bacteria are readily identifiable from his accurate descriptions. His observations were contained in some 165 letters, mostly addressed to the Royal Society, and published originally as English or Latin abstracts in the Philosophical Transactions. Many of his letters and several of his microscopes are still in existence. Anyone who wants to learn more about Leeuwenhoek should begin with Clifford Dobell's engaging biography *Antony van Leeuwenhoek and his Little Animals*.
Instructions to Authors

Molecular Biology of the Cell (formerly Cell Regulation), the journal owned and published by the American Society for Cell Biology, will publish papers that describe and interpret results of original research concerning the molecular aspects of cell structure and function. Studies whose scope bridges several areas of biology are particularly encouraged, for example cell biology and genetics. The aim of the Journal is to publish papers describing substantial research progress in full; papers should include all previously unpublished data and methods essential to support the conclusions drawn. The Journal will not, in general, publish papers that are merely confirmatory, preliminary reports of partially completed or incompletely documented research, findings of as yet uncertain significance, or reports simply documenting well known processes in organisms or cell types not previously studied. Methodological studies will be considered only when some new result of biological significance has been achieved with the method.

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The Results section should present, in a logical order, the experiments that support the conclusions to be drawn later in the Discussion. Particular care should be taken in the Results section to state results exactly; this is not the place for interpretations, extended lines of inference, arguments or speculations. The Discussion section, in contrast, is intended to allow the authors to propose their interpretation of their results, and to suggest what they might mean in a larger context. The view of the Editorial Board is that the Results section should conform to a high standard of rigor, but that an imaginative Discussion is the prerogative of the authors. The Results and Discussion sections may be subdivided further if subheadings give the manuscript more clarity.

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Cover

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