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NATURE REVIEWS MICROBIOLOGY

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As another year beckons, *Nature Reviews Microbiology* begins 2005 by taking you on a journey — from an exploration of the distant past, through the present day and by familiar foes, to a picture of the future and the power of technology.

As well as providing a fascinating glimpse into the diseases of our ancestors, palaeomicrobiology — a discipline dedicated to the detection and identification of microorganisms from ancient specimens — also contributes to our understanding of the epidemiology and genetic evolution of microorganisms. On page 23, Michel Drancourt and Didier Raoult review the current 'state of play' in this emerging field.

One scourge of the past that continues to infect one-third of the world's population is the bacterium *Mycobacterium tuberculosis*. Tuberculosis in humans is an extremely complex disease in which the infecting agent can adapt its metabolism depending on the specific location of the microorganism in the host. As argued by Helena Boshoff and Clifton Barry III on page 70, a better understanding of these metabolic pathways will be invaluable in the search for new therapeutic interventions.

And what of the future. Recent advances in imaging technology are making major contributions to our understanding of microbial processes and will continue to do so. On page 13, Michael Rossmann and colleagues describe how combining cryo-electron microscopy data with atomic structures of virion components has advanced our understanding of dynamic processes in flaviviral life cycles. Finally, on page 81, Simon Hay and colleagues assess the effect of a demographic trend of the future — urbanization — on malaria transmission and disease burden in Africa, an analysis facilitated by a technology of the future, satellite imagery.



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