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Autore	Srivastava Sheela
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Nota di contenuto	Chapter 1.Bacteria and Science of Genetics -- Chapter 2.Gene Mutation—The Basic Mechanism of Generating Variability -- Chapter 3. Conjugation -- Chapter4.Transformation -- Chapter 5.Transduction -- Chapter 6.Plasmids and their Biology -- Chapter 7.Transposable Elements -- Additional Readings -- Index.
Sommario/riassunto	Described as the earliest, simplest life forms, with unlimited metabolic versatility, bacteria are ideally suited to answer some very fundamental questions on life and its processes. They have been employed in almost all fields of biological studies, including Genetics. The whole edifice of science of Genetics centers around three processes: the generation, expression, and transmission of biological variation, and bacteria offer immediate advantages in studying all the three aspects of heredity. Being haploid and structurally simple, it becomes easy to isolate mutations of various kinds and relate them to a function. The availability of such mutants and their detailed genetic and biochemical analyses lead to a gamut of information on gene expression and its regulation. While studying the transmission of biological variation, it is clear that unlike their eukaryotic counterpart, a more genetic approach needs to be employed. Transmission of genetic information in most eukaryotic organisms rests on sexual reproduction that allows the generation of genetically variable offspring through the process of gene recombination. Even though bacteria show an apparent preference for

asexual reproduction, they too have evolved mechanisms to trade their genetic material. In fact, bacteria not only could acquire many genes from close relatives, but also from entirely distant members through the process of horizontal gene transfer. Their success story of long evolutionary existence will stand testimony to these mechanisms. While teaching a course on Microbial Genetics to the post-graduate students at Delhi University, it was realized that a book devoted to bacterial genetics may be very handy to the students, researchers, and teachers alike. A strong foundation in genetics also helps in comprehending more modern concepts of molecular biology and recombinant DNA technology, always a favorite with the students and researchers. Planning the format of the book, emphasis has been laid on the generation and transmission of biological variability. The omission of expression part is indeed intentional because lots of information is available on this aspect in any modern biology book. The contents are spread over seven chapters and the text is supported with figures/tables wherever possible. The endeavor has been to induce the readers to appreciate the strength of bacterial genetics and realize the contribution of these tiny organisms to the growth of biological sciences as a whole and genetics in particular.
