

various laboratories, are considered significant in some cases, but in others no greater than the experimental error. The 5-methylcytosine content, which, when high, tends to be balanced by a reduced amount of cytosine, is significantly different for the desoxypentosenucleic acids of every animal species, and is the same only in desoxypentosenucleic acids derived from different tissues of the same species. The greater constancy of the composition of the desoxypentosenucleic acids isolated from higher organisms, than that from lower ones, apparent from the results thus far available, is considered to be consistent with the concept that the analyses determine the mean composition of a number of gene-specific nucleic acids.

In a critical review of the chemical and photometric evidence leading to the concept of a constant amount of desoxypentosenucleic acid in the interphase nuclei of different somatic tissues of the same species, Pollister justly emphasizes that the apparently constant values obtained are statistical means, and neither procedure excludes the possibility that the nuclear desoxypentosenucleic acid content varies during intracellular metabolism. In this paper attention is also drawn to the high content of nonhistone protein in cell nuclei (provisionally estimated, for example, as 65% of the

dry weight of the interphase nucleus of the mammalian liver cell), which differs from cell to cell, and which merits more detailed chemical investigation than it has hitherto received.

Putnam produces evidence to show that most of, if not all the phosphorus of the T7 bacteriophage nucleoprotein is derived from the desoxypentosenucleic acid of the *Escherichia coli* host cell. Synthesis of the phage desoxypentosenucleic acid is preceded by the degradation of the host nucleic acid to oligo- or mononucleotides.

Kozloff presents an interesting summary of evidence to show: (1) an extensive breakdown of the *E. coli* T6r+ and T7 bacteriophages occurs during the reproductive process; (2) the contribution of parent material to the virus progeny is not a specific and obligate part of the reproductive process; (3) the transfer of nitrogen and phosphorus from the parent virus to the progeny involves excessive rearrangements and is largely independent of genetic units. In the subsequent discussion certain of the results and hypotheses presented in the paper are debated with exuberance.

MICHAEL WEBB

*Department of Microbiology
Rutgers University*

Sir James Jeans: A Biography. E. A. Milne. New York: Cambridge Univ. Press, 1952. 176 pp. Illus. \$4.00.

Just before his death in 1950 Milne completed this biography of Sir James Jeans. The biography consists of three parts, the first part being a memoir by S. C. Roberts, of the Cambridge University Press. In this memoir, Roberts describes how he induced Jeans to write *The Universe Around Us*, the first of the series of books meant for the general public in which Jeans so successfully popularized the theories and discoveries of astronomy and physics. Roberts also describes how Jeans met his second wife in the Swiss and Italian mountains, while on holiday.

The main part of the book is Milne's biography. In the first six chapters Milne describes in detail Jeans' life, his academic career, and his career as a writer of popular books. The last six chapters are devoted to a critical account and assessment of Jeans' contributions to science. The bibliography of all Jeans' works is given at the end of the book. In it one finds a list of eight technical books, ten popular books, and 76 research papers, as well as of ten references to abstracts of lectures. From this biography there emerges a picture of Jeans, the man and the scientist, but also a picture of Milne, and finally a picture—and not always a pleasant one—of the atmosphere of British astronomy.

The biographical part falls naturally into six chapters. The first deals with Jeans' boyhood and years in Cambridge, the second with his stay in Princeton,

where he was invited as professor of applied mathematics by Woodrow Wilson at the same time as O. W. Richardson, G. Birkhoff, O. Veblen, and Henry Norris Russell. The third chapter deals with the period from 1909–19, during which Jeans probably made his most important contributions to science. The fourth chapter is devoted to the ten years that Jeans was secretary of the Royal Society, and the fifth and sixth chapters deal with Jeans' popular works and the last years of his life. Milne stresses the fact that as a stylist, both in his scientific writings and his popular books, Jeans was outstanding. Before he started writing for the general public, Jeans had gained a place in *The Oxford Book of English Prose*.

In the last part of the biography, Milne discusses critically, sometimes perhaps too critically, Jeans' contributions to science. Again the division in chapters comes naturally, and they deal successively with kinetic problems, rotating masses, star clusters, stellar equilibrium, and Jeans and philosophy.

Jeans' popular books are still fascinating to read, whether or not one agrees with him in all detail, and it is extremely fortunate that we now possess in Milne's biography a fascinating account of this outstanding British scientist. As one can expect from the Cambridge University Press the book is beautifully produced and at a reasonable price.

D. TER HAAR

*Department of Natural Philosophy
University of St. Andrews, Scotland*