It consists of forty-seven chapters, divided into five sections. The first section is a
general, elementary, and brief introduction to the bacterial cell and its physiology, as
well as to immunoassays and other techniques used in identification and classification of
bacterial species.

Section two, with 22 chapters, has been devoted to systemic bacteriology. These
chapters, although brief, are well organized; almost all include a discussion about
microscopy, culture appearances, biochemical reactions, serological characteristics,
and, finally, infections of pathogenic members of each genus. There is, however, hardly
any material about the clinical management or treatment of infections, although,
where applicable, immunization has been discussed. A brief discussion about the
clinical management of each bacterial infection would have been appropriate. It is also
worth noting that mention of the epidemiology of bacterial species in this book pertains
mostly, though not exclusively, to Britain. For example, in the discussion of infections
caused by mycobacteria and corynebacteria, the main focus in terms of epidemiology is
England.

The third section explains the diagnostic methods used in bacteriology laboratories.
This section is written almost like a manual; each chapter consists of two parts:
specimen collection and laboratory procedure. A concise figure providing an overview
of the laboratory procedure accompanies each chapter.

Sections four and five consider a few of the important pathogenic species of protozoa
and fungi, respectively.

The book contains 151 excellent, mostly colorful figures, supplemented by 13 tables.
(An error was noted in the presentation of biochemical reactions in differentiation of
bacterial species in figure 22, where the description of an upper row of test tubes has
been mistakenly given to a lower row and vice versa.) There is a detailed index;
however, no bibliography or list of references is given.

Overall, Bacteriology Illustrated, is well organized and clearly written; about
one-fourth of the information and many of the illustrations presented are hard to find
in many bacteriology textbooks, which make it a fine “supplement to more complete
texts.”

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ON SIZE AND LIFE. By Thomas A. McMahon and John Tyler Bonner. New York,
W.H. Freeman and Company, 1983. 255 pp. No price.

There is more to being small than getting stepped on. Also complicating the life of
the little guy are low Reynolds numbers, low attainable kinetic energies, significant
intermolecular attractions, and a low ratio of volume to surface area. Yet smallness has
some distinct advantages, including the ability to fall large distances with nary a
bruise, to crawl up walls and across ceilings, and maybe even to walk on water,
although extricating one’s self from a drop of it can be daunting. Using a quantitative
and analytic approach, On Size and Life examines the consequences of size for living
things, and there are many. Authors Thomas A. McMahon and John Tyler Bonner
draw on the work of a number of pioneering scientists, including J.S. Huxley, Max
Kleiber, and Yale ecologist G.E. Hutchinson. With tools like dimensional analysis,
allometric formulas, and logarithmic plotting, the authors show that mountains of raw
biological data can be reduced to manageable mathematical statements. In some cases these equations describe reality with surprising accuracy. For example, analysis of mammalian bone structure reveals that small skeletons are not just scale models of skeletons of larger related species. The bones of large mammals are relatively thicker; in fact, bone thickness varies as the length raised to the $\frac{3}{2}$ power. Thus mammalian skeletons are what mechanical engineers call elastically similar: long bones resist bending due to gravity and other forces as effectively as short bones. The authors use an eclectic set of examples, from musical instrument sound frequencies to submarine hydrodynamics, in order to illustrate the principles of physics and engineering which apply to living things. And even those with a poor appetite for algebra will have little trouble digesting *On Size and Life*. McMahon and Bonner keep their mathematical highjinks to a minimum, relying on a few equations and a lot of intuitive arguments to make clear important concepts (although several chapters do have appendices with more rigorous derivations for the purists).

What emerges from all the number crunching and logarithmic plotting presented in *On Size and Life* is yet more proof of the order which governs life in its bewildering variety. The simple beauty of these revelations will charm not only the general reader but even the experienced scientist. The book is striking visually as well; as is usual with *Scientific American* publications, the illustrations are superb. To read *On Size and Life* is at once pleasant and challenging, and very satisfying for the curious scientist, whether amateur or professional.

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**PANIC. FACING FEARS, PHOBIAS, AND ANXIETY.** By Stewart Agras. New York, W.H. Freeman and Company, 1985. 151 pp. $11.95. Paperback.

A man in his fifties has always had an unexplained fear of being grabbed from behind. He avoids crowds and sits with his back to the wall. By chance he runs into an old childhood acquaintance who says, “Remember when you were a boy, I grabbed you from behind in the grocery store and you fainted?” After fifty years of bewilderment, the origin of his phobia has finally been uncovered.

Phobias, and related anxiety disorders, are the subject of this short and readable volume by Stewart Agras, a Stanford-based psychiatrist. Agras is quick to point out that the example above is the rare exception; most phobics never discover such a neat link between trauma and phobia. In fact, the lack of a psychoanalytic explanation for most phobics’ fears underlies one of the book’s fundamental conclusions—that behavioral therapy, rather than psychotherapy, is usually the treatment of choice.

The volume is loosely divided into ten chapters. The first few chapters set down the working definitions of the anxiety spectrum: from common fears, to phobias, to the full-blown panic syndrome. The three are distinguished from each other by the degree of disability associated with the fear. The panic syndrome is the most disabling of the three, often leaving the victim housebound for fear of experiencing an attack outside the home. Physiologically, the symptoms simulate those of a genuine heart attack—racing, erratic heartbeat; chest pain; sweating; tingling; and fear of impending doom—though the stimulus is psychological.

The dichotomy of modern man—a civilized being trapped inside a primitive