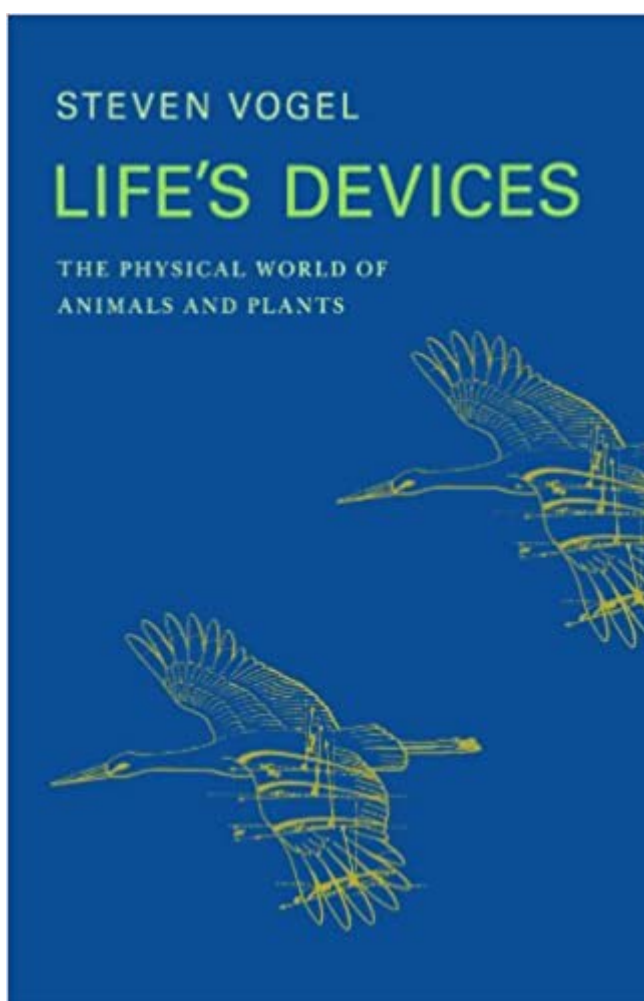


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Life's Devices: The Physical World Of Animals And Plants (Princeton Paperbacks)



Synopsis

This entertaining and informative book describes how living things bump up against non-biological reality. "My immodest aim," says the author, "is to change how you view your immediate surroundings." He asks us to wonder about the design of plants and animals around us: why a fish swims more rapidly than a duck can paddle, why healthy trees more commonly uproot than break, how a shark manages with such a flimsy skeleton, or how a mouse can easily survive a fall onto any surface from any height. The book will not only fascinate the general reader but will also serve as an introductory survey of biomechanics. On one hand, organisms cannot alter the earth's gravity, the properties of water, the compressibility of air, or the behavior of diffusing molecules. On the other, such physical factors form both constraints with which the evolutionary process must contend and opportunities upon which it might capitalize. *Life's Devices* includes examples from every major group of animals and plants, with references to recent work, with illustrative problems, and with suggestions of experiments that need only common household materials.

Book Information

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Customer Reviews

"A brilliant and eccentric book that looks at living things from an engineering point of view, assuming astonishingly little previous knowledge of science on the reader's part."--Nature

How might we begin looking at living things? The ecologist, Marston Bates, once made a

suggestion, saying 'I think I'll start with a rabbit sitting under a raspberry bush and from this gradually go into the mechanics of the situation.' This book is about just that--the mechanics of the situation.

OK

Thanks!

One of the most readable biology books I've ever come across. While it can easily be used for an undergraduate course in animal physiology and evolution, Vogel's text is humorous, (obscure references, funny quotes, and puns abound, adding to the text rather than detracting from it), but also covers a wide range of topics with clear explanations. The chapters are well structured and the table of contents suggests some of the more interesting highlights: why an ant might bite but can't hit, reinflating squid, plumbing the common features of the pipes within organisms, etc. While there is a strong emphasis on fluids in biology, (the author's specialty), it's an amazingly readable, well-written, and informative book on the entire subject of the physical constraints on animals for the interested laymen or undergrad. Table of contents: Constraints & Opportunities, A Variety of Variables, Size & Shape, Dimensions Gradients & Summations, Gases & Liquids, Viscosity & Flow, Pressure & Flow, Diffusion vs Convection, A Matter of Materials, Arranging Structures, Insinuations About Curves, Systems of Support, Mechanics of Mobility, Staying Put & Getting Away, Energy & Afterthoughts. Also has an extensive and well-prepared bibliography, a great jumping off point for further adventures in the field.

This is an excellent book for those that are interested in learning more about how life developed on this planet. It engages the reader with a variety of examples, stimulating thought as how complex life is and how it's bound to our physical universe. I recommend it!

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