This book provides a clear and concise summary of the fluid dynamics of the locomotion of living organisms. The biological phenomena described in detail range from the swimming of bacteria and fish to the flying of insects and birds. The breadth of treatment requires the study of two basic fluid-dynamical regimes. In the first case, that of small organisms, the viscosity of the fluid is paramount in deciding the most effective swimming strategy. However, for larger insects, birds, and most fish, the viscosity of the air or water may be treated as if it were zero, and resulting mechanisms of propulsion are very different. Both these types are studied, with emphasis on the unsteady character of natural movements. Written for the advanced student, this volume assumes familiarity with basic fluid mechanics, although some elementary topics are included. It will be readily accessible to students of applied mathematics and biologists who have engineering or physics backgrounds.

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